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Orkand Corp, Silver Spring, Md.

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HEALTH INSURANCE STUDIES: CONTRACT RESEARCH SERIES

COMPARATIVE EVALUATION OF COSTS, QUALITY AND SYSTEM EFFECTS OF AMBULATORY SURGERY PERFORMED IN ALTERNATIVE SETTINGS

METHODOLOGICAL APPENDIX

DECEMBER, 1977

U.S. Department of Health, Education, and Welfare
HEALTH CARE FINANCING ADMINISTRATION
OFFICE OF POLICY PLANNING AND RESEARCH

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ABSTRACT

The primary component of this project was a comparative evaluation of the costs, quality, and system effects of surgery performed in a freestanding ambulatory surgical center as compared with the alternative surgical settings in which similar procedures are performed (inpatient, traditional hospital outpatient, and hospital-affiliated ambulatory surgical centers). The three-year evaluation, focused on Phoenix, Arizona, was based on a large-scale primary data collection effort in which approximately 900 patients were traced through the surgical process. Direct observation of resources used during surgeries at seven institutions was supplemented by the abstracting of medical records, the analysis of institutional financial records and the interviewing of patients and physicians. In addition, data were collected on the total number and type of surgeries performed in 20 Phoenix institutions and were analyzed together with extensive secondary data.

THE ORKAND CORPORATION

TR-77W-102

COMPARATIVE EVALUATION OF COSTS, QUALITY AND SYSTEM EFFECTS OF AMBULATORY SURGERY PERFORMED IN ALTERNATIVE SETTINGS

METHODOLOGICAL APPENDIX

December, 1977

This report is made pursuant to contract #SSA-PMB-74-387. The amount charged to the Department of Health, Education and Welfare for the work resulting in this report (inclusive of the amounts so charged for any prior reports submitted under this contract) is $545,794. The names of persons, employed or retained by the contractor, with managerial or professional responsibility for such work, or for the content of the report, are as follows:

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The Project Officer for this contract was Mr. John Coyle, a staff member within the Office of Demonstrations and Evaluations, Office of Policy Planning and Research. The views and opinions expressed in the report are the contractor's and no endorsement by the Health Care Financing Administration or Department of Health, Education and Welfare is intended or should be inferred.

ACKNOWLEDGEMENTS

We are very grateful to the individuals and institutions who contributed to the successful completion of the project. Especially noteworthy are the seven principal study institutions: Surgicenter, Arizona Children's Hospital, Good Samaritan Hospital, Maricopa County Hospital, Phoenix Baptist Hospital, St. Joseph's Hospital, and Scottsdale Memorial Hospital. Also very helpful were the other cooperative institutions in the Phoenix area.

We would also like to acknowledge current and former Orkand Corporation staff members, other than the principal authors who contributed to the report: Dr. Allen Berkowitz, who supervised a major segment of the data collection; Mr. Albert Lowey Ball, who prepared an initial draft of Chapter V; and Mr. Arthur Janovsky, who assisted in the data processing and in the analysis of the physician interview data.

Of particular importance to success of this effort was the contribution of the HCFA Project Officer, Mr. John Coyle, who participated actively in the project from its inception, and provided continued support, assistance, and technical guidance.

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TABLE OF CONTENTS

INTRODUCTION A-1

SELECTION OF SURGICAL SETTINGS A-2

SELECTION OF INSTITUTIONS A-5

SPECIFICATION OF SURGICAL EPISODE PHASES A-11

SELECTION OF SPECIFIC SURGICAL PROCEDURES A-14

SELECTION OF PATIENTS FOR THE STUDY A-17

COST DATA COLLECTION METHODOLOGY A-24

QUALITY DATA COLLECTION METHODOLOGY A-46

IMPACT METHODOLOGY A-97

LIST OF EXHIBITS

A-1 Inventory of Surgical Facilities and Surgery Volume by Facility and Setting in Maricopa County, 1975 . . . . A-7

A-2 Study Facilities Classified by Type of Surgical Facility A-9

A-3 Surgical Volume by Setting Accounted for by Study Facilities, 1975 . . . . A-10

A-4 Phases of the Surgical Episode A-12

A-5 Target Sample Sizes by Procedure and Setting A-20

A-6 Patient Informed Consent Form A-22

A-7 Resource Utilization Study Work Sampling Form-Patients, Pre-Operative, and Post-Operative Phases A-26

A-8 Resource Utilization Study Work Sampling Form-Patients, Operative Phase A-27

A-9 Resource Utilization Study On Call Form-Personnel Post-Operative Phase A-28

A-10 Resource Utilization Study Work Sampling Form Personnel, Pre-Operative, Operative, Post-Operative Phases A-30

LIST OF EXHIBITS - (CONT.)

A-11 Resource Utilization Study Work Sampling-Personnel Observation Log A-31

A-12 Specific Tasks Included in Time-Task Study A-32

A-13 Resource Utilization Study - Time Study A-33

A-14 Nursing Service Operating Room Salary Schedule A-38

A-15 Computation of "Constructive" Labor Rate (By Category) A-39

A-16 Cost Data Collection A-43

A-17 Medical Record Abstract A-49

A-18 Patient Interview Questionnaire A-59

A-19 Physician Questionnaire A-87

A-20 Proportion of Capacity at Primary Impact to All Greater Phoenix Institutions A-101

A-21 Sampling Days and Dates for Impact Study A-102

APPENDIX

DATA COLLECTION METHODOLOGY

INTRODUCTION

In this appendix, the methodologies employed to collect the data for the comparative evaluation of the cost, quality, and impact of ambulatory surgery in alternative surgical settings at the Phoenix, Arizona site are presented. The data collection activities for the major parts of the study effort began in August, 1975 and ended in October, 1976 and required continuous participation by the project staff from The Orkand Corporation and the five person team of registered nurses in Phoenix who were trained in the resource utilization observations, medical record abstracting, and patient interviewing aspects of the study.

The methodology also required the cooperation of the administration, medical records, accounting, and nursing staffs at six institutions in the metropolitan Phoenix area on a day-to-day basis over the period of the data collection in order to facilitate access to the patient care areas within the institutions and make available the necessary records for review in the cost, quality, and impact components of the study. In addition, the data collection efforts relied heavily on the cooperation, consent, and good will of the patients and physicians in the Phoenix metropolitan area who allowed their surgical episodes and surgical practices to be the subject of the intensive investigation.

Prior to the description of the data collection processes for the cost, quality, and impact data, five major elements of the study design are discussed.

SELECTION OF SURGICAL SETTINGS

The concept of the surgical setting was the basis of the design of the evaluation effort. Based on the initial information available about the practice of surgery in the Phoenix area, it was felt that five distinct settings for the practice of surgery could be identified that were organizationally and operationally different from one another. The five settings were:

- Hospital Inpatient (IP)
- Traditional Hospital Outpatient (OP)
- Hospital Affiliated Ambulatory Surgical Center (HAASC)
- Free Standing Ambulatory Surgical Center (FSASC)
- Physician Office.

The objective of the study effort was to investigate and compare the practice of surgery in each of the five settings to determine if, for a comparable set of surgical procedures, differences in the cost or quality of the surgical services were present.

The definition and a description of each of the five surgical settings are presented in the following paragraphs.

Hospital Inpatient Setting

The hospital inpatient surgical setting is the traditional form for the provision of surgical services and is characterized by the availability of a wide range of medical and surgical facilities, equipment and manpower. The primary distinction of this surgical setting is the requirement for a surgical patient to stay in the hospital for at least one night. The overnight stay, or stays, generally follow the surgery, however, may include the admission of the patient on the day prior to surgery and the consequent overnight stay incurred before the day of the surgical procedure.

Traditional Hospital Outpatient Setting

The traditional hospital outpatient surgical setting is both administratively and physically within the hospital inpatient facility. The setting usually provides a wide range of surgical services, sometimes in conjunction with the emergency room department or the clinic facilities of the hospital. Generally the traditional hospital outpatient setting is not characterized by a high volume of surgeries. The major characteristic of this setting is that it is not discretely separate from the hospital inpatient surgical facilities and, as such, provides surgical services on an outpatient basis using both the main hospital operating rooms and recovery rooms that are generally used for inpatient surgery.

Hospital Affiliated Ambulatory Surgical Setting

The hospital affiliated ambulatory surgical setting is a hospital owned and administered facility that is specifically designated as an outpatient or ambulatory surgical unit. The primary characteristic of this surgical setting is that it provides dedicated space for the performance of ambulatory surgical procedures. The dedicated space includes pre-operative areas, operating rooms, and recovery room areas that are used for outpatients undergoing surgery. This type of surgical setting is a relatively new approach to outpatient surgical services and has replaced the traditional hospital outpatient surgical setting in some hospitals. The facility may be either physically a part of the inpatient hospital or a separate structure generally located on the hospital grounds.

Free Standing Ambulatory Surgical Setting

A free standing ambulatory surgical setting is a facility designed specifically to provide outpatient surgical services without the capability for overnight observation or care of patients. The free standing facility is not owned, operated, or affiliated with a hospital. Although free standing ambulatory surgical facilities frequently are separate physical plants as in the case of the Phoenix Surgicenter, a non-hospital owned surgical facility located in a large office building is also classified as "free standing." The primary distinction for the free standing classification is the ownership of the facility rather than its physical location. An additional criterion that may be applied is the range of surgical services provided. For the purposes of this study a free standing ambulatory surgical setting was described as a facility offering a broad range of surgical procedures across several surgical specialties.

Physician Office Surgical Setting

The physician's office surgical setting is any private physician office in which surgical procedures are performed. Group practices in which a few physicians share operating facilities would also be included in this category provided that the resulting facility is a combination of continuing care offices and minor surgical facilities.

Settings which were not easily classified, such as an oral surgeon's office or a plastic surgeon's office, were classified according to the primary function of the facility. The oral surgeon's office is primarily for the provision of general dental services and was considered a physician's office setting. A group practice of gynecologists with a shared operating room for minor procedures was considered a physician's office because the primary function is the provision of continuing care, not surgical services.

Problems in Classification of Surgical Settings

The classification of surgical settings is somewhat more difficult than the setting definitions may imply. Although the definitions are mutually exclusive, in practice a surgical facility in its utilization may have the characteristics of more than one setting. The major difficulties are in the classification of the hospital affiliated ambulatory surgical facility as distinct from the traditional hospital outpatient setting and the classification of a free standing ambulatory surgical setting as distinct from a physicians office setting.

The difficulty in distinguishing a hospital affiliated ambulatory surgical facility setting is when the operating rooms in the ambulatory facility are used by the hospital for some portion of the hospital's major inpatient surgery. Thus, in this situation, the concept of a dedicated ambulatory facility is to some extent violated. This problem occured with one of the hospital affiliated ambulatory surgical facilities included in the study where approximately ten percent of the patient volume of the facility consisted of cases where the patient was routinely admitted to the hospital for an overnight stay following the surgery. The surgical procedure most frequently involved was tonsilectomy with adenoidectomy. The question is, at what point does the use of the hospital affiliated ambulatory surgical center operating rooms for inpatient surgery patients make the center an adjunct to the regular hospital inpatient service. It was decided to classify the center by the primary function of the facility which was to provide ambulatory surgical services and consider the post-operation inpatient admission patients as special cases involving more intensive follow-up care.

The problem in distinguishing the free standing ambulatory surgical center setting from physician office settings is most apparent in the case of an operating room or rooms used in conjunction with one or more physician's offices. For some physicians offices the surgical services and facilities can be very elaborate and well equipped. This is notably the case with several plastic surgeons and some gynecologists in the Phoenix area. For the purposes of the evaluation, a facility to be classified as a free standing ambulatory surgical center setting, must be capable of providing a wide range of surgical procedures across several specialties, administering general anesthesia to patients, and be organized to serve several physicians in the community rather then one surgeon or group practice.

SELECTION OF INSTITUTIONS

With the exception of the Surgicenter, the free standing ambulatory surgical center that is the focus of the study effort, no other provider of surgical services in the Phoenix area was required to participate in the study. The Surgicenter, as part of its participation in the Social Security Administration's demonstration project which reimbursed the facility fees for Medicare patients beginning in April, 1974, agreed to participate in the study.

In order to identify the types of facilities and surgical settings available in the Phoenix area, an inventory of all surgical facilities was made by the project staff as of December, 1974. Four institutions were not included in the inventory because the facilities are not available to the general public. These institutions are Indian Health Service Hospital, Veteran's Administration Hospital, Arizona State University Health Service and the U.S. Air Force Hospitals at Luke and Williams Air Force Bases. This inventory is presented in Exhibit A-1. An indepth briefing covering the objectives, major research hypotheses, logistics, data to be collected, and proposed analysis to be conducted was prepared by the project staff and presented to the administrators of the principal hospitals in the metropolitan Phoenix area. The hospitals to which the presentation was made included:

- Arizona Childrens Hospital
- Boswell Memorial Hospital
- Desert Samaritan Hospital
- Good Samaritan Hospital
- John C. Lincoln Hospital
- Maricopa County Hospital
- Maryvale Samaritan Hospital
- Phoenix Baptist Hospital
- Phoenix General Hospital
- St. Joseph's Hospital
- St. Lukes Hospital
- Scottsdale Memorial Hospital

Exhibit A-1

Inventory of Surgical Facilities and Surgery Volume by Facility and Setting in Maricopa County, 1975

FACILITY \ SURGICAL SETTING	IP		OP		HAASC		FSASC		TOTAL	
	N	%	N	%	N	%	N	%	N	%
Arizona Childrens	1,393	1.8	327	3.1	0	0.0	0	0.0	1,720	1.7
Boswell Memorial	2,931	3.7	226	2.1	0	0.0	0	0.0	3,157	3.0
Chandler Community	402	0.5	5	1/	0	0.0	0	0.0	407	0.4
Desert Samaritan	4,080	5.1	1,167	11.1	0	0.0	0	0.0	5,247	5.1
Doctors'	6,152	7.8	1,404	13.3	0	0.0	0	0.0	7,556	7.3
Glendale Samaritan	853	1.1	161	1.5	0	0.0	0	0.0	1,014	1.0
Good Samaritan	12,625	15.9	1,594	15.1	0	0.0	0	0.0	14,219	13.7
John C. Lincoln	3,655	4.6	410	3.9	0	0.0	0	0.0	4,065	3.9
Maricopa County	4,657	5.9	1,046	9.9	0	0.0	0	0.0	5,703	5.5
Maryvale Samaritan	3,101	3.9	1,276	12.1	0	0.0	0	0.0	4,377	4.2
Memorial	1,543	1.9	285	2.7	0	0.0	0	0.0	1,828	1.8
Mesa General	1,519	1.9	0	0.0	0	0.0	0	0.0	1,519	1.5
Mesa Lutheran	6,171	7.8	635	6.0	0	0.0	0	0.0	6,806	6.6
NHE Community, Phoenix	1,166	1.5	144	1.4	0	0.0	0	0.0	1,310	1.3
NHE Community, Scottsdale	514	0.6	64	0.6	0	0.0	0	0.0	578	0.6
Phoenix Baptist	3,544	4.5	150	1.4	1,895	39.9	0	0.0	5,589	5.4
Phoenix General	4,554	5.7	5	1/	0	0.0	0	0.0	4,559	4.4
St. Joseph's	9,092	11.5	1,001	9.5	0	0.0	0	0.0	10,093	9.7
St. Lukes	4,120	5.2	345	3.3	0	0.0	0	0.0	4,465	4.3
Scottsdale Memorial	5,699	7.2	11	0.1	2,858	60.1	0	0.0	8,568	8.3
Tempe Community	868	1.1	166	1.6	0	0.0	0	0.0	1,034	1.0
Valley View Community	718	0.9	104	1.0	0	0.0	0	0.0	822	0.8
Arizona Medical Plaza	0	0.0	0	0.0	0	0.0	918	10.2	918	0.9
Phoenix Surgical Facilities	0	0.0	0	0.0	0	0.0	716	8.0	716	0.7
Surgicenter, Inc.	0	0.0	0	0.0	0	0.0	7,326	81.8	7,326	7.1
TOTALS[2]	79,357	100.0%	10,526	99.7%	4,753	100.0%	8,960	100.0%	103,596	100.0%

[1] Less than 0.1%

[2] May not add to 100% due to rounding.

Source: Reports from individual facilities; Arizona Department of Health Services, Annual Survey of Health Care Institutions, 1976; primary data collection at selected facilities.

Two additional hospitals, Doctors Hospital in Phoenix and Mesa Lutheran Hospital in Mesa, would not participate in the project briefing and were consequently dropped from further consideration. Of the hospitals to which the briefing was presented, the following institutions agreed to participate in the cost and quality studies:

- Arizona Childrens Hospital
- Good Samaritan Hospital
- Maricopa County Hospital
- Phoenix Baptist Hospital
- St. Joseph's Hospital
- St. Luke's Hospital
- Scottsdale Memorial Hospital

However, after inspecting the operating room log books of St. Lukes Hospital to estimate the frequency of the surgical procedures included in the evaluation it was concluded that the frequency of the study procedures was too low to provide for a cost effective data collection effort at that institution.

Therefore, seven institutions, including the Surgicenter, comprised the set of institutions included in the study. Exhibit A-2 presents the classification of the facilities included in the study by surgical setting. Exhibit A-3 shows the number and percent of total Maricopa County surgeries accounted for by the study institutions in 1975.

The project staff attempted to elicit the cooperation of Phoenix area physicians in the cost and quality components of the study in the physicians office setting. However, it was found to be extremely difficult to obtain the cooperation of physicians to allow the observation of surgical care in the physician's office and the subsequent review of patient medical records maintained in the physician's office. In addition, the office surgical volume for any individual physician was so low as to render the data

Exhibit A-2

Study Facilities Classified by Type of Surgical Facility

Setting / Facility	Hospital Inpatient	Traditional Hospital Outpatient	Hospital Affiliated Ambulatory Surgical Center	Free Standing Ambulatory Surgical Center
Arizona Childrens	X	X		
Good Samaritan	X	X		
Maricopa County	X	X		
Phoenix Baptist	X		X	
St. Joseph's	X	X		
Scottsdale Memorial	X		X	
Surgicenter				X
TOTAL NUMBER OF INSTITUTIONS	6	4	2	1

Exhibit A-3

Surgical Volume By Setting Accounted For By Study Facilities - 1975

Setting / Facility	Hospital Inpatient		Traditional Hospital Outpatient		Hospital Affiliated Ambulatory Surgical Center		Free Standing Ambulatory Surgical Center		All Settings	
	N	%	N	%	N	%	N	%	N	%
Arizona Childrens	1,393	1.8	327	3.1	0	0.0	0	0.0	1,720	1.7
Good Samaritan	12,625	15.9	1,594	15.1	0	0.0	0	0.0	14,219	13.7
Maricopa County	4,657	5.9	1,046	9.9	0	0.0	0	0.0	5,703	5.5
Phoenix Baptist	3,544	4.5	150	1.4	1,895	39.9	0	0.0	5,589	5.4
St. Joseph's	9,092	11.5	1,001	9.5	0	0.0	0	0.0	10,093	9.7
Scottsdale Memorial	5,699	7.2	11	0.1	2,858	60.1	0	0.0	8,568	8.3
Surgicenter	0	0.0	0	0.0	0	0.0	7,326	81.8	7,326	7.1
SUBTOTAL	37,010	46.8%	4,129	39.1%	4,753	100.0%	7,326	81.8%	53,218	51.4%
All Other Facilities	42,347	53.2	6,397	60.9	0	0.0	1,634	18.2	50,378	48.6
TOTAL	79,357	100.0%	10,526	100.0%	4,753	100.0%	8,960	100.0%	103,596	100.0%

Source: Primary Data Collection at Individual Institutions.

collection effort impractical. With the permission of the project officer, the study of cost and quality in the physician's office was reduced in scope to provide for indepth discussions with a limited number of surgeons in the Phoenix area concerning the practice of office based surgery and the abstracting of medical records where the physician would grant permission.

SPECIFICATION OF SURGICAL EPISODE PHASES

In order to support an indept study of the differences in the cost and quality of surgery performed in alternative surgical settings, the surgical episode was conceptualized as consisting of a series of five phases in which various activities occurred. The phases encompass the total activity of the patient during a surgical episode. The relationship among the phases is depicted in the diagram in Exhibit A-4. The definitions of the five surgical phases and a detailed discussion of each phase are presented in the following paragraphs.

Screening Phase

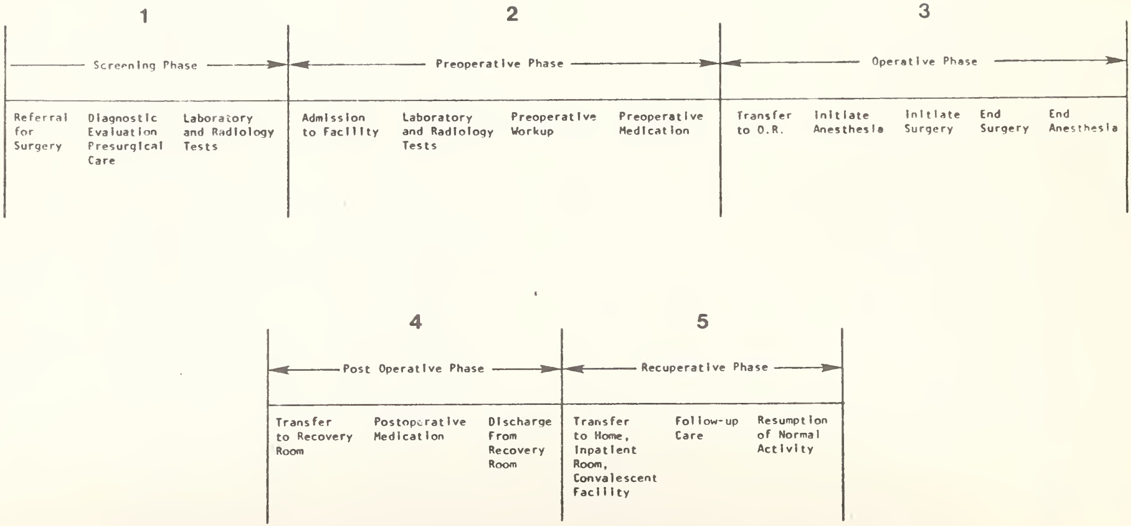
Screening is the preliminary patient-physician and/or patient-facility interaction beginning with the referral for surgery, including the initial diagnosis and plan of treatment. It is a process which generally takes place in the physician's office or the outpatient facility of a clinic or hospital. The screening phase includes all services directly relevant to the surgical treatment prior to the actual admission of the patient to the surgical facility for the operative procedure.

Pre-Operative Phase

The pre-operative phase includes the provision of services that are initiated with the patient's admission to the surgical facility and terminates with the transfer of the patient to the operating room. The pre-operative phase includes preparations for surgery, physical examinations, anesthesiology examination, and pre-operative laboratory workups performed after the patient is admitted to the facility for the surgery.

Exhibit A-4

Phases of the Surgical Episode



Operative Phase

The operative phase includes the performance of the procedure itself and all required medical and surgical services during the surgical treatment. This is essentially the treatment phase limited to the period of the patient's presence in the operating room.

Post-Operative Phase

The post-operative phase includes the provision of medical services from the time the patient leaves the operating room until the patient leaves the recovery room or equivalent holding area. This period includes the initial recovery, post-operative observation and any other care provided to the patient before the patient is returned to the regular hospital bed in the case of inpatient surgery, or discharged from the surgical facility in the case of outpatient or ambulatory surgery. For those patients whose procedures are performed in free standing facilities, transfers to another facility such as a hospital, are included as post-operative care until the patient is either assigned to a regular hospital inpatient bed or discharged from the facility. Discharge to a long-term care facility is considered in the same context as termination of recovery room care or discharge to the patient's home and are, therefore, included in the recuperative phase.

Recuperation Phase

The recuperative phase includes all care and services provided to the patient after the patient leaves the recovery room. The recuperation phase is complete when the patient has reported that he or she has returned to normal activity. The recuperative phase may include an in-facility component, as in the case of a hospital inpatient who is discharged from the recovery room to a hospital bed for an overnight stay in the hospital, as well as an at-home component that follows either discharge from the recovery room (in the case of an outpatient) or discharge from the hospital room (in the case of an inpatient). In some cases, the recuperative phase may include patient time spent in a convalescent facility after discharge from the recovery room and prior to the patient's transfer to home or regular place of residence.

SELECTION OF SPECIFIC SURGICAL PROCEDURES

The types of surgical procedures that may be performed in an outpatient or ambulatory surgical setting varies greatly. At the Surgicenter over 250 different types of procedures have been performed and are accounted for on the charge schedule of the facility. The number of case types is increased if the substantial number of potential procedure combinations are considered. The resources required to perform the procedures also vary considerably by procedure type. Therefore, it was necessary to specify the individual surgical procedures to be included in the study. After intensive consideration by the project staff, the physician consultant, and the Social Security Administration, the following procedures were selected for the evaluation:

- Myringotomy With Tubes and Adenoidectomy - incision of the tympanic (paracentesis of the drum membrane) with insertion of tubes; removal of adenoid tissue.
- Tonsillectomy and Adenoidectomy - removal of both tonsil and adenoid tissue.
- Dilation and Curettage - cervical dilation followed by curettage of the endometrium of the uterus.
- Laparoscopy with Tubal Coagulation - inspection of the abdomen with a laparoscope and sterilization by coagulation of the fallopian tubes.
- Inguinal Herniorrhaphy - suture operation for inguinal hernia.
- Excision of Breast Mass - diagnostic and/or therapeutic removal of tissue mass on the breast.
- Excision of Ganglion - excision of a ganglion in any location.
- Vasectomy - sterilization by interruption of the vas deferens.
- Circumcision - excision of part of all of the prepuce.

- Augmentation Mammoplasty - enlargement of the breasts with bilateral placement of implants.
- Eye Muscle Operation - resession and resection of eye muscle.
- Excision of Lipoma or Sebaceous Cyst - removal of adipose tissue or cyst.

Several criteria were employed in the selection of the surgical procedures included in the study. The primary criteria considered were:

- Frequency of performance in alternative settings
- Representations of surgical specialties
- Representation of Medicare patients
- Usefulness for quality evaluation

Frequency

Each of the surgical procedures selected for the evaluation represented at least one percent of the total number of procedures performed at the Phoenix Surgicenter since the facility opened in February, 1970. It was expected that these relatively high volume procedures would occur frequently enough at least in the free standing ambulatory surgical setting during the data collection period of the study to provide a sufficient number of cases for the analysis. A major problem in the hospital inpatient and traditional hospital outpatient setting was that these minor procedures did not occur frequently. It was suspected and later confirmed by the findings of the impact evaluation that minor surgical procedures had shifted from the hospital inpatient and traditional hospital outpatient settings to the hospital affiliated and free standing ambulatory surgical center settings before the evaluation was begun. However, inspection of surgical log books revealed that no other set of procedures would provide more "overlap;" between the settings. It was therefore decided to proceed with the high volume procedures identified from the free standing ambulatory surgical setting.

Representation of Surgical Specialties

Surgical procedures were selected so that several different surgical specialties would be represented in the mix of procedures. For the twelve surgical procedures included in the evaluation, physicians with the following specialties may be expected to be represented:

- Otolaryngology
- Gynecology
- Orthopedic surgery
- Urological surgery
- Plastic surgery
- General surgery

In addition, some procedures may be expected to be performed by general practitioners and family practicioners.

Representation of Medicare Patients

The potential for procedures included in the evaluation to be performed on Medicare patients was an additional desired criterion for procedure selection. Of the surgical procedures, the following four procedures were potential candidates for Medicare patients:

- Dilation and Curettage
- Inguinal Herniorrhaphy
- Excision of Ganglion
- Excision of Lipoma or Sebaceous Cyst.

However, inspection of the surgical logs from the hospital affiliated and free standing ambulatory surgical revealed that Medicare patient volume at the ambulatory surgical centers was very low (in the range of two to five percent). Therefore, the representation of Medicare patients in the sample of patients included in the study was expected to be very low.

Usefulness for Quality Evaluation

In order to meet the needs of the quality evaluation, several additional procedure characteristics were considered in the development of the set surgical procedures to be used in the evaluation. These additional characteristics include:

- Each type of procedure selected should be sufficiently homogeneous to permit a reasonably comparable evaluation of quality for procedures within a type.
- Procedures should be included which permit a comparison of surgery performed in the alternative surgical settings.
- The surgical needs of diverse age groups and both sexes should be represented
- Procedures should be well defined with relatively little variation in technical approach
- A patient should not be included in this study if the procedure is performed in combination with other procedures.

SELECTION OF PATIENTS FOR THE STUDY

The selection of patients for the study was a difficult problem that required careful consideration of the practical limitations both in the design of the sample and scheduling of the observations of patients during the surgical episode. The sample selection and scheduling process is described in the following paragraphs.

Considerations in Matching of Patients by Setting

Careful consideration was given to the issue of matching patients by setting for the evaluation. In the final design of the sample selection process no provision was made for patient selection based on matching patient characteristics between surgical settings. The decision not to match in the design of the sample was based on several considerations.

- It was important to analyze the differences in the procedure specific patient populations treated in the surgical settings. This must be done to characterize the patient population for ambulatory surgery as contrasted with the patient population for inpatient surgery for the procedures included in the analysis. Matching the patients in the sampling process would have precluded profiling the characteristics of the patient populations in the alternative settings because all matched samples would have had similar distributions of characteristics.

- The process of matching would have required the selection of specific characteristics as the criteria on which to base the matching. There is little theoretical or practical basis for a priori identification of the critical characteristics to include in matching criteria beyond such basic factors as age and sex.

- Matching would have limited the ability of the evaluation to investigate the differences between variation in a patient characteristics and surgical episode costs if the matched samples were homogeneous in a patient characteristic.

- Many of the procedures included in the evaluation occurred in relatively low frequencies in the alternative surgical settings and, therefore, would have resulted in insufficient numbers of patients to allow for matching of patient in the sample selection.

Therefore, it was decided that patients to be included in the sample would be selected at random from the patients having surgery at the institutions participating in the study for the days on which data collection was scheduled and subject to certain cost efficiency constraints such as a minimum number of patients to be selected at any one institution in any one day.

Sample Size Determination

In order to gain preliminary insight into the estimated size of the sample required to detect differences in procedure cost, a preliminary analysis was conducted of surgical procedures in the hospital inpatient, hospital affiliated ambulatory surgical center, and free standing ambulatory surgical center. Total length of stay in each setting was used as a surrogate for costs in the design analysis. The sample size determinations were a compromise between the desired sample sizes based on the design analysis and the estimated frequency of the selected procedures at the participating facilities. The target sample sizes by procedure and setting are given in Exhibit A-5. The desired sample sizes were established early in the data collection effort. However, it became increasingly apparent to the project staff that the shift of minor surgical procedures from the hospital inpatient and traditional hospital outpatient surgical settings to the ambulatory center setting was continuing — thereby making fewer and fewer candidate patients available for the study from the inpatient and traditional hosptial outpatient settings as the data collection period progressed. In addition, some procedures in the ambulatory surgical center settings declined in frequency of occurance over the data collection period thereby making it impossible to fulfill the sample design targets for some procedures including vasectomies, circumcisions, and tonsillectomies and adenoidectomies.

Data Collection Scheduling

The major portion of the data collection effort required the direct observation of patients and personnel during the surgical episode at the facility. In order to accomplish this task, two teams of registered nurse observers were recruited and trained. Each team consisting of three members and one alternate. Each day, the Field Supervisor (the senior registered nurse) called the surgical scheduling department of each of the seven institutions participating in the study to obtain the list of surgical patients for the following day including name, age, sex, scheduled procedure, operating room, scheduled time of surgery, surgeon's name, inpatient or outpatient status, and room number if inpatient. The Field Supervisor selected the patients and institutions for the next day's observations and scheduled the observations with the teams. The Field Supervisor called back each institution to inform the surgical scheduling and admitting departments of the patients to be included in the study. Upon admission, the admitting department would present to the patient the Patient Informed Consent Form (Exhibit A-6) and explain the study objectives and requirements and formally request the patient's participation. If the patient agreed to cooperate and signed the consent form the patient was then included in the study sample and all data collection activity were undertaken. If the patient declined to cooperate, no data collection effort was initiated and the patient was counted as declined response. Counts were also maintained of the number of surgical procedures cancelled after the data collection team arrived on site.

Exhibit A-5

Target Sample Sizes by Procedure and Setting

Setting Procedure	Hospital Inpatient	Traditional Hospital	Hospital Affiliated Ambulatory Surgical Center	Free Standing Ambulatory Surgical Center	Total
Myringotomy (With Tube) & Adenoidectomy	0	0	25	25	50
Tonsillectomy & Adenoidectomy	20	0	20	20	60
Dilation & Curettage	30	30	50	50	160
Laparoscopy (With Bilateral Tubal Coagulation)	30	30	50	50	160
Excision of Breast Mass	20	20	20	20	80
Ganglionectomy	20	20	20	20	80

Exhibit A-5 — (cont.)

Setting / Procedure	Hospital Inpatient	Traditional Hospital	Hospital Affiliated Ambulatory Surgical Center	Free Standing Ambulatory Surgical Center	Total
Inguinal Herniorrhaphy (Bilateral)	20	0	25	25	70
Vasectomy	0	0	30	30	60
Circumcision	30	0	30	30	90
Augmentation Mammoplasty (Bilateral)	0	25	25	25	75
Eye Muscle Resession/Resection	30	30	30	30	120
Excision of Lipoma or Sabaceous Cyst	30	30	30	30	120
TOTAL	230	185	355	355	1,125

Exhibit A-6

PATIENT INFORMED CONSENT FORM

AMBULATORY SURGERY RESEARCH PROJECT SOCIAL SECURITY ADMINISTRATION	PATIENT INFORMED CONSENT FORM Form 06	THE ORKAND CORPORATION 8630 FENTON STREET SILVER SPRING, MD 20910 (301) 585-8480

To the Patient:

At the present time, a study of selected surgical facilities in the Phoenix area is being conducted under the sponsorship of the Social Security Administration. The purpose of the study is to decide if outpatient and ambulatory surgery facilities should qualify for the Medicare/Medicaid program. This facility is participating in the study. The study is being conducted by The Orkand Corporation, a research firm, under a contract with the Federal Government.

Included in the study are:

- Observing the work of doctors, nurses, and other medical staff to see what work is performed and how long it takes in each of the facilities included in the study.
- Comparing patient medical records between different facilities in order to determine the results of major types of surgery performed in different types of facilities.
- Interviewing some patients after their recovery from surgery to determine the cost and convenience of various types of surgical facilities.

Exhibit A-6 — (cont.)

One of the major concerns in this study is the privacy of patients. Therefore, any information you divulge will be held in strictest confidence and will not be voluntarily released to any person or organization. Information will be given to other organizations only in such form that individuals cannot be identified. There will be no direct observation of the surgical procedure itself. Also patients will not be identified by name in any report.

If you have any questions about this study, a member of the staff will provide further information. If you are willing to help in this study, we ask that you sign the attached form. Thank you for your assistance.

PATIENT PERMISSION TO OBSERVE AND WAIVER

I, ______________________________, hereby give permission for observation of activities related to my surgical procedure (but not the surgical procedure itself) at ____________________* as a part of the evaluative study of ambulatory surgery facilities sponsored by the Social Security Administration under Contract No. SSA-PMB-74-387. I understand that this study may also involve review of medical records and follow-up interviews. All aspects of the study have been explained to my satisfaction, and with this understanding I agree to participate.

(Witness) ____________________ (Signed) ____________________

(Date) ____________________ (Date) ____________________

(*Name of Facility)

Patient Participation Rate

A total of 1,495 patients were invited to participate in the surgical study. Of the 1,495 patients 900 or 60.2% agreed to cooperate and signed the informed consent form previously discussed. All 900 patients were directly observed by the resource utilization study team during their stay in the surgical facility. Of the 900 patients, medical records were abstracted for 882 patients or 98.0%. Eighteen medical records could not be located by the facilities for inclusion in the study. Of the 900 patients that agreed to participate in the study only 585 participated in the follow-up interview for a response rate of 65% for this component of the study.

COST DATA COLLECTION METHODOLOGY

The cost data collection methodology consisted of two major components:

- Resource Utilization Studies
- Cost Identification Studies

Each of the techniques is described in the following sections.

Resource Utilization Studies

The purpose of the resource utilization studies was to determine the type and quantities of all the inputs to the surgical process for each patient included in the study.

Labor Resource Inputs. In order to determine the labor inputs as specifically as possible, three interrelated data collection activities were undertaken.

> Patient Study - The patient study used a combination of work sampling and continuous observation techniques to determine what categories of personnel were directly providing service to the patient during the pre-operative, operative, and post-operative phases of the surgical episode and for what length of time. The categories of personnel studied were:
>
> - Surgeon
> - Anesthesiologist
> - Nurse Anesthesist

- Registered Nurse
- Licensed Practical Nurse
- Technician
- Aide/Orderly

For the pre-operative and post-operative phases, observations were made at random intervals of time between two and five minutes for the total period of time the patient was in the phase of care. This procedure is a modified work sampling technique which was pretested in the early part of the data collection period. At each observation the presence or absence of medical personnel directly with the patient was recorded. Estimates were made of the amount of time spent by each category of personnel in direct care of the patient. The data collection instrument used in the observations in the pre-operative and post-operative phases is presented in Exhibit A-7.

For the operative phase a continuous observation technique was employed to record the type and duration of all personnel in the operating room during the time the patient was in the operating room. Using the instrument shown in Exhibit A-8 the in and out times of all personnel were recorded and the total time spent directly with the patient was obtained.

In addition to the direct time study in the post-operative phase, at each observation interval in the post-operative phase the number and type of personnel present in the recovery room but not with a particular patient was recorded as was the total number of patients in the recovery room. Therefore, estimates of the average number of personnel per patient in an "on-call" status during any part of the day in the recovery room were made. This method was used to allocate the on call time of personnel across patients in the recovery areas. The allocation method was not found to be necessary in the pre-operative phase because personnel in the facilities included in the study were either with a patient or otherwise out of the pre-operative area and not generating "on-call" time in this phase. The data collection instrument used in this study is shown in Exhibit A-9.

Exhibit A-7

Resource Utilization Study Work Sampling Form-Patients, Pre-Operative and Post-Operative Phases

AMBULATORY SURGERY RESEARCH PROJECT SOCIAL SECURITY ADMINISTRATION	RESOURCE UTILIZATION STUDY Form 01	THE ORKAND CORPORATION 8630 FENTON STREET SILVER SPRING, MD. 20910 (301) 585-8480

Patient Name:	Case#: 1-4 Age: 5-6	Room: Date:	Time: Procedure: 7-8
Facility: 9-10	Setting: 11	Phase: 12 Observer: 13-14	Observation Type: 15 W.S. 1 C.S. 2
Patient Arrival Date: 15-21	Patient Departure Date: 26-31	Observer Start Date: 36-41	Observer Stop Date: 46-51
Patient Arrival Time: 22-25	Patient Departure Time: 32-35	Observer Start Time: 42-45	Observer Stop Time: 52-55

OBSERVATION COUNT	STAFF SURGEON	STAFF ANESTH.	STAFF OTHER M.D.	STAFF R.N.	STAFF L.P.N.	STAFF AIDE/ORDERLY
Tot.	Tot.	Tot.	Tot.	Tot	Tot.	Tot.
56-58	59-61	62-64	65-67	68-70	71-73	74-76

End Card 1 80	1	Begin Card 2 1-4	DUP

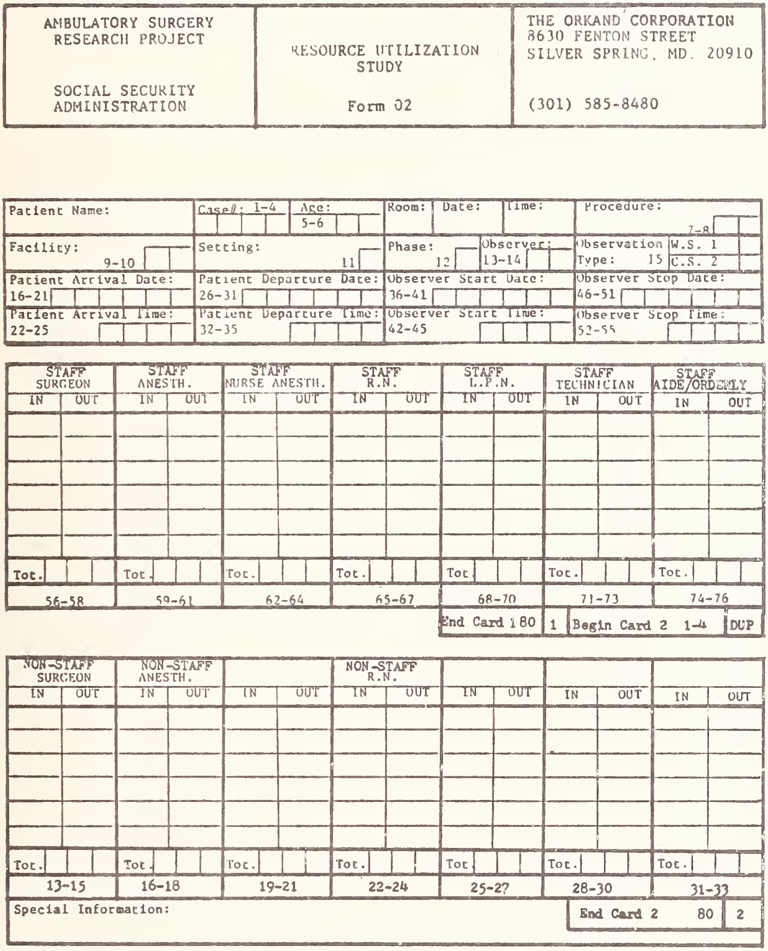
STAFF TECHNICIAN	NON-STAFF SURGEON	NON-STAFF ANESTH.		NON-STAFF R.N.		
Tot.	Tot.	Tot	Tot.	Tot.	Tot.	Tot.
13-15	16-18	19-21	22-24	25-27	28-30	31-33

Special Information:

End Card 2 80	2

Exhibit A-8

Resource Utilization Study Work Sampling Form- Patients, Operative Phase



AMBULATORY SURGERY RESEARCH PROJECT SOCIAL SECURITY ADMINISTRATION	RESOURCE UTILIZATION STUDY Form 02	THE ORKAND CORPORATION 8630 FENTON STREET SILVER SPRING, MD. 20910 (301) 585-8480

Patient Name:	Case#: 1-4 Age: 5-6	Room: Date: Time:	Procedure: 7-8
Facility: 9-10	Setting: 11	Phase: 12 Observer: 13-14	Observation Type: 15 W.S. 1 C.S. 2
Patient Arrival Date: 16-21	Patient Departure Date: 26-31	Observer Start Date: 36-41	Observer Stop Date: 46-51
Patient Arrival Time: 22-25	Patient Departure Time: 32-35	Observer Start Time: 42-45	Observer Stop Time: 52-55

STAFF SURGEON		STAFF ANESTH.		STAFF NURSE ANESTH.		STAFF R.N.		STAFF L.P.N.		STAFF TECHNICIAN		STAFF AIDE/ORDERLY	
IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT
Tot.		Tot.		Tot.		Tot.		Tot		Tot.		Tot.	
56-58		59-61		62-64		65-67		68-70		71-73		74-76	

End Card 1 80 | 1 | Begin Card 2 1-4 | DUP

NON-STAFF SURGEON		NON-STAFF ANESTH.				NON-STAFF R.N.							
IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT
Tot.		Tot.		Tot.		Tot.		Tot		Tot.		Tot.	
13-15		16-18		19-21		22-24		25-27		28-30		31-33	

Special Information:

End Card 2 80 | 2

Exhibit A-9

Resource Utilization Study on Call Form-Personnel, Post Operative Phase

AMBULATORY SURGERY RESEARCH PROJECT SOCIAL SECURITY ADMINISTRATION	RESOURCE UTILIZATION STUDY Form 08	THE ORKAND CORPORATION 8630 FENTON STREET SILVER SPRING, MD. 20910 (301) 585-8480

OBSERVATION AND ON-CALL RECORD

Facility: 9-10	Setting: 11	Phase: 12	Obs.#: 13-14	Date: 15-20

TIME	# PT	# RN	#	#	TIME	# PT	# RN	#	#	TIME	# PT	# RN	#	#	TIME	# PT	# RN	#	#	TIME	# PT	# RN	#	#
0600					0819					1041					1259					1530				
0605					0823					1046					1304					1535				
0607					0825					1048					1309					1539				
0611					0828					1053					1312					1544				
0616					0831					1058					1315					1549				
0620					0836					1101					1319					1551				
0624					0839					1106					1321					1556				
0628					0844					1108					1324					1601				
0630					0848					1113					1329					1604				
0633					0852					1116					1331					1609				
0635					0857					1119					1334					1611				
0639					0859					1124					1339					1616				
0642					0902					1126					1341					1618				
0646					0904					1129					1343					1622				
0649					0907					1133					1345					1624				
0652					0911					1137					1349					1628				
0654					0916					1141					1354					1630				
0657					0918					1144					1359					1632				
0700					0923					1149					1402					1636				
0705					0927					1151					1406					1638				
0708					0929					1153					1408					1640				
0710					0931					1156					1413					1642				
0715					0934					1200					1416					1646				
0720					0937					1204					1420					1649				
0723					0941					1206					1424					1654				
0725					0943					1209					1428					1659				
0730					0947					1214					1430					1704				
0733					0950					1219					1434					1707				
0735					0953					1221					1438					1712				
0737					0958					1223					1442					1715				
0740					1000					1226					1444					1720				
0742					1003					1230					1449					1724				
0746					1007					1232					1452					1729				
0751					1011					1236					1454					1733				
0753					1016					1239					1258					1737				
0755					1018					1241					1503					1740				
0800					1023					1246					1508					1745				
0805					1028					1248					1513					1748				
0810					1032					1252					1518					1751				
0815					1036					1254					1521					1756				
0817					1039					1257					1525					1800				

Personnel Study - A personnel study was conducted for all pre-operative, operative, and post-operative personnel in the facility who provide patient care. The personnel study differs from the patient study in that its purpose was to differentiate between personnel time spent active with patients and personnel time spent active without the patient or unavailable. The estimate of active without patient and unavilable time was then allocated across all patients in the facility. A standard work sampling approach was utilized in the personnel study and was conducted in all facilities participating in the evaluation. The data collection instruments used in the personnel study are presented in Exhibits A-10 and A-11.

Time Task Study - The time task study was conducted to estimate for the list of tasks given in Exhibit A-12 the amount and type of personnel time required. The tasks were selected because they are associated with every procedure and are performed in the absence of a patient. In each facility each task was observed a specified number of times to develop estimates of total personnel time required. This time was then allocated to each procedure observed in the facility. The data collection instrument used in the time task study is presented as Exhibit A-13.

Supplies Resource Inputs. Supplies used in the performance of a surgical procedure were inventoried in detail. In each facility participating in the study, the head nurse of the operating room area was interviewed. For each of the surgical procedures included in the evaluation a comprehensive list of the types and quantities of all disposable and reusable supplies was developed. The completeness of the list was verified by direct observation of the use of the supplies during the surgical episode. These supplies were designated as the "standard" supplies.

Standard supplies by procedure were identified by obtaining the procedure "standard pack" data. The information was obtained from the chief surgical nurse of each facility who was provided with a copy of the supply use compilation and was asked to provide a similar listing of standard items prepared as a package for each phase of the 12 procedures of interest. The supplies were identified as being used in either the pre-operative, operative or post-operative phases of care. The listing included not only the complete descriptive name of the item, but any internal order codes, and manufacturers' codes. For example, simply stating that sutures are used was insufficient. Rather, it was described as "Ethicon Suture S-103H". Such a description, including internal requisition or manufacturer's codes, ensured accurate identification of the specific items during the inventory item costing.

Exhibit A-10

Resource Utilization Study Work Sampling Form Personnel, Pre-Operative, Operative, Post-Operative Phases

AMBULATORY SURGERY RESEARCH PROJECT SOCIAL SECURITY ADMINISTRATION	RESOURCE UTILIZATION STUDY Form 04	THE ORKAND CORPORATION 8630 FENTON STREET SILVER SPRING, MD. 20910 (301) 585-8480

WORK SAMPLING STUDY

Facility: 1-2	Setting: 3	Location: 4-5		Observer: 6-7	
Observer Start Date: 8-13		Staff Minutes Available	R.N. 22-24	L.P.N. 25-27	Aide/Orderly 28-30
Observer Start Time: 14-17	Observer Stop Time: 18-21		31-34	34-36	Patients: 37-39

ACTIVITY / STAFF	ACTIVE WITH PATIENT	ACTIVE ON SPECIFIC TASKS	OTHER ACTIVE	ON-CALL	UNAVAILABLE	IDLE	UNKNOWN
R.N.'s	40-41	42-43	44-45	46-47	48-49	50-51	52-53
L.P.N.'s	54-55	56-57	58-59	60-61	62-63	64-65	66-67
AIDES/ ORDERLY	68-69	70-71	72-73	74-75	76-77	78-79	06-07
			END	CARD 1 80 1	BEGIN CARD 2 1 5 DVP		
	08-09	10-11	12-13	14-15	16-17	18-19	20-21
	22-23	24-25	26-27	28-29	30-31	32-33	34-35

Exhibit A-11

Resource Utilization Study Work Sampling-Personnel, Observation Log

AMBULATORY SURGERY RESEARCH PROJECT SOCIAL SECURITY ADMINISTRATION	RESOURCE UTILIZATION STUDY Form 05	THE [illegible] 8630 FENTON STREET SILVER SPRING, MD 20910 (301) 585-8480

WORK SAMPLING OBSERVATION LOG

Facility:	Setting:	Location:	Observer:

STAFF NAME	SHIFT		TIME (min)																					# of Obs.	
	FROM	TO																							
R.N.s:																									
L.P.N.s:																									
AIDE/ORDERLY																									
:																									
:																									

EXHIBIT A-12

SPECIFIC TASKS INCLUDED IN TIME-TASK STUDY

- Preoperative Bed Set Up
- Preoperative Bed Tear Down
- Operating Room Set Up
- Operating Room Tear Down
- Post-Operative Bed Tear Down
- Surgical Staff Scrub

Exhibit A-13

AMBULATORY SURGERY RESEARCH PROJECT SOCIAL SECURITY ADMINISTRATION	RESOURCE UTILIZATION STUDY Form 03	THE ORKAND CORPORATION 8630 FENTON STREET SILVER SPRING, MD. 20910 (301) 585-8480

TIME STUDY

Facility: 1-2 ☐☐	Setting: 3 ☐	Observer: 4-5 ☐☐	TASK NAME: 6-7 ☐☐

DATE	SURGEON	ANESTH.	RESIDENT/INTERN	R.N.	L.P.N.	TECHNICIAN	AIDE/ORDERLY	CLERK	HOUSEKEEPER	OTHER	START TIME	STOP TIME
											:	:
											:	:
											:	:
											:	:
											:	:
											:	:
											:	:
											:	:
											:	:
											:	:
											:	:
											:	:
											:	:
	☐☐	☐☐	☐☐	☐☐	☐☐	☐☐	☐☐	☐☐	☐☐	☐☐		
8-13	14-15	16-17	18-19	20-21	22-23	24-25	26-27	28-29	30-31	32-33		

Non-standard surgical supplies were identified from the medical records of the patients included in the study. However, the use of non-standard supplies was infrequent for the surgical procedures included in the study.

Medications and Anesthetic Agents Resource Inputs. The medical record of each patient included in the study was carefully reviewed to determine all medications and anesthetic agents used in the surgical procedure. Type, quantity and the phase in which the medication was given to the patient were noted. It was not possible in the evaluation to record the quantities of anesthetic agents used in the individual surgical procedures. Notations on the medical records were insufficient to allow for an accurate calculation and it was not feasible to attach flow meters to the anesthesic containers to directly measure the anesthesia resources consumed. Therefore only the presence or absence of specific anesthesia agents were recorded.

Support Service Resource Inputs. Support service inputs to the surgical episode were inventoried from the medical record. All laboratory tests and radiology services provided by the facility for each patient were recorded. The presence or absence of pathology services was also recorded.

Miscellaneous Resource Inputs. Miscellaneous services and resources were identified by a comprehensive, face to face, patient interview which was conducted by a registered nurse one to three months after the surgery was performed. The questionnaire specifically investigated the use by the patient of any services required as a result of or related to the surgical episode. In addition the patient was asked during the interview about the use of physician services, supplies, and support services during the screening and recuperative phases of care which were not directly observed by the study team.

As a result of the activities undertaken in the resource utilization study, the types of resources consumed or used by each patient in the study was identified and the quantities of resources were specified.

Cost Identification Studies

The cost identification studies sought to identify or estimate three major types of surgical episodes related costs:

- Direct Costs
- Indirect Costs
- Opportunity Costs.

In this section the methodologies employed to collect the data required for the analysis of costs are discussed.

Direct Costs. Direct costs consisted of three major categories: direct labor, direct supplies, and direct medications and materials. Each cost category is discussed below.

Direct Labor. Direct labor is the time of professional and paraprofessional staff spent in each phase of each surgical procedure included in the study. By use of the work sampling portion of the industrial engineering study, actual time expended by the various professional and paraprofessional categories of personnel was determined, by phase, for each of the twelve types of procedures. The cost data collection effort collected data to provide for estimates of the unit cost of labor for each of the appropriate personnel categories.

The labor categories to be used for cost purposes in this study were as follows:

- Surgeon
- Anesthesiologist
- Other M.D.
- Registered Nurses (RNs)
- Licensed Practical Nurses (LPNs)
- Technicians
- Orderlies and Aides

The cost data collection obtained sufficient data on the personnel structure of each facility to allow reconciliation of particular categories and pay rates of personnel to the categories used in this study. All Registered Nurses, regardless of specific assignment, were treated as one labor category. In the larger facilities, a variety of breakdowns of assignments were encountered. Included in such assignment-oriented categorizations were head, or supervisory, nurse positions; charge nurses; floor nurses; and functionally-oriented breakdowns, such as recovery room nurse, and operating room nurse. For costing purposes, all personnel in such categories were treated as belonging to a single class. Adjustments were made in pay rate computations in order to account for any differentials in pay rates based on differing assignments. Similar treatment was accorded to other categories such as LPNs, technicians, and aides/orderlies.

Collection of Direct Labor Rates - It was necessary to collect sufficient data on each facility category rate to allow for computation of a category labor rate. In general, this required that the following data was collected for each category defined by a given facility:

- Total salaries paid for the most recent accounting period.
- Hours expended during the accounting period.
- Labor rate structures.
    - The labor rate structure, broken down by category
    - Staffing patterns for the particular facility for the accounting period in question
    - Total salaries paid for the accounting period in question
    - Basis of differential, premium, overtime, incentive or other special pay which increases pay rates above those shown in the basic labor rate structure
    - Other relevant data as determined on a case-by-case basis.
- Charts of Accounts.

Computation of Category Rates - In most cases, determination of salary rates in both free standing and hospital-affiliated ambulatory surgical centers was straightforward. Because there were not any patients remaining overnight, all time worked was in essense, "straight time". That is, no shift differentials, overtime, or premium pay was included in labor rates. In the case of inpatient surgical facilities, however, such differentials did exist, and an adjustment in labor rates was made in order to compensate for this factor.

Additionally, it was preferable to obtain actual, as opposed to "constructive" labor rates. That is, to the extent that the mean rate, by category of labor, could be obtained by dividing total category compensation by total category hours worked, this was to be preferred to the development of an artificial rate by dividing category pro-forma rates by staffing pattern weights. Problems arose, however, when no such straightforward data was available. Such problems arose either because of the structure of the accounting system or because of unwillingness of the particular facility to provide such data from the accounting system. In any event, an alternative means of computation of direct labor rates by category was used. A "constructive" category rate was developed in these cases. Such a "constructive" category rate was developed by use of the salary structure, using the most typical rate, and the staffing pattern of the particular facility. Exhibit A-14 presents a staffing pattern and salary structure for a unit of the Phoenix Baptist Hospital. Exhibit A-15 presents a computation of constructive salary rates based on this staffing pattern and the salary structure noted. Specifically note that:

- Various categories of personnel have been grouped together to match the project labor categories.
- A "most typical" rate has been selected from the pro-forma scales in concert with hospital administrative personnel.
- The constructive rate provides for an adjustment to cover shift differentials.

Exhibit A-14

Effective Date: 11/1/74
Asst. Admin. Approval

NURSING SERVICE

OPERATING ROOM

SALARY SCHEDULE

JOB CODE	JOB TITLE	APPROVED POSITIONS F/T	APPROVED POSITIONS P/T	SHIFT	STARTING SALARY	3 MOS.	6 MOS.	1 YR.	2 YR.	3 YR.	4 YR.
781 *	Supervisor	1		6:45 am to	$ - -	$- -	$- -	$- -	$- -	$- -	$- -
726 *	Head Nurse	1		3:15 pm	740.	- -	760.	780.	795.	810.	825.
626 **	Staff Nurse	5))	Any Combi- nation	"	715.	- -	735.	755.	770.	785.	800.
416 ***	Surgical Tech	2)	totaling 7	"	455.	- -	470.	485.	490.	500.	- -
626 **	Recovery Room Nurse	2		"	715.	- -	735.	755.	770.	785.	800.
226	Nurse Aide	1		"	375.	390.	- -	405.	415.	425.	- -
216	Orderly	2	1 (8 hr)	"	375.	390.	- -	405.	415.	425.	- -
627 **	Charge Nurse	1		2:45 pm	800.	- -	820.	840.	855.	870.	885.
**	Staff Nurse	2		to	775.	- -	795.	815.	830.	845.	860.
626 **	Recovery Room Nurse	1		11:15 pm	775.	- -	795.	815.	830.	845.	860.
351	Unit Secretary	1		9am-5:30pm	400.	415.	- -	430.	440	450.	- -
216 ****	Orderly	1		2:45-11:15pm	390.	405.	- -	420.	430	440.	- -

NOTE: Beginning salaries are based and include differentials as follows:

* O.R. Supervisor: $55; $25/O.R. Staff.
* Head Nurse: $25; $25/O.R. Staff.
** O.R. Staff: $25; $60/Evening Shift.
*** O.R. Staff: $15.00
**** Evening Shift - $15.00

This Position Control provides for assigning two persons per Operating Room and two for Recovery Room and allows for an additional RN to fill in one-half day for each of the above six Operating Room Nurses and time off for Recovery Room Nurses. It also frees up the O.R. Supervisor from fixed Staff assignments.

Original Date:	9/1/70		
Revised Dates:	4/1/71	10/24/72	6/23/74
	2/19/71	11/3/72	
	2/7/72	11/12/72	
	4/20/72	10/1/73	

.nge This Revision: Added 40-hr. Staff Nurse - Eve. Shift.

Exhibit A-15

COMPUTATION OF "CONSTRUCTIVE" LABOR RATE
(By Category)

I. R.N.'s

Category	(a) Staffing Pattern	(b) Salary	(c) Weighted Salary (c)=(a)x(b)
Head Nurse	1	$795/mo.	$ 795
Staff Nurse	5	770	3,850
Recovery Room Nurse	2	770	1,540
Charge Nurse	1	855	855
Staff Nurse (Night)	2	830	1,660
Recovery Room Nurse (Night)	1	830	830
Totals	12	XXX	$9,530

MEAN MONTHLY SALARY, RN's = $\frac{9,530}{12}$ = $794/mo. $\left(\frac{(c)}{(a)}\right)$

II. Technicians - $490/mo. - only one case

III. Nurses Aides and Orderlies

Category	Staffing Pattern	Salary	Weighted Salary
Nurse Aide	1	$415	$ 415
Orderly	3	415	1,245
Orderly (Night)	1	430	430
Totals	5		$2,090

MEAN MONTHLY SALARY, AIDES & ORDERLIES = $\frac{2,090}{5}$ = $418/mo.

IV. Unit Secretary - Indirect Labor

- One position, the unit secretary, has been classified as indirect cost. An adjustment will need to be made in the direct labor cost base when computing indirect cost allocations.

In some cases, it was not possible to create constructive rates because of the lack of comparable data from employee payroll files. In these instances, average hourly rates for facility personnel were used.

For private physicians, including surgeons and anesthesiologists, hourly cost rates were not developed. Rather, the physicians' charges for services rendered as reported in the patient interview were used as a proxy for the cost of physicians time.

Labor costs on the nursing ward were handled somewhat differently. Based on information reported in the Medicare Cost Reports or obtained from the accounting offices, an average ward labor cost per patient day was calculated. This average cost was then applied to the number of days the patient spent on the nursing ward to compute a labor cost for that portion of the patients in patient stay.

To summarize, salary rates for institutionally based personnel, derived or computed from the cost data collection effort, were, when possible, based on actual payroll data; exclusive of fringe benefits costs; adjusted to compensate for shift differential and other forms of premium pay; and categorized in project categories which was comparable from facility to facility.

Direct Supplies. Direct supplies included all items of a disposable nature which are (1) provided on a physical unit basis and (2) which are consumed in the course of each phase of a given procedure. This typically included such items for external application as bandages and sutures, disposable blades and syringes, cautery tools, gowns, sheets, drapes, surgeon's gloves, and other like items. Typically, these items are bought in bulk, and dispensed on a unit basis for use in procedures. Generally, they are dispensed in one of two manners. They may be prepared as a "standard pack" for each phase of a procedure. The second way in which items may be dispensed is on a "non-standard" basis. That is, items will be drawn from supply as needed. In any event, the key characteristics of direct materials are (1) their use in physically discrete units, i.e., one bandage, one gown; and (2) their disposable (one time use) nature. One category of supplies was specifically difficult in terms of inclusion or exclusion from direct supplies. These included items of limited durability, such as cloth gown and sheets and similar materials which are typically expended or consumed within one year.

Only those items directly consumed in the process of providing surgical treatment, regardless of phase of treatment, were categorized as direct supplies. All office and similar records and administrative supplies were excluded from direct supplies and costed as a part of indirect cost. The main problem in categorization of direct supply items was with regard to the items that are (correctly) costed on an indirect basis by hosptials due to the "cost center" basis of their systems, such items may be directly attributed to an individual procedure. Therefore, they were direct costed for purposes of this study.

The key to accurate direct supply costs, once a determination of the direct or indirect nature of the particular type of supply has been made, was to accurately determine item purchases of supplies are typically by "order lots" or "shipping units". These were typically by box or case. Thus, a procedure for inventory item costing was required.

Inventory Item Costing Procedures - In order to collect inventory item cost data, it was necessary to work with the purchasing or supply department of the facilities. The procedure used in conducting such visits is described below. The purpose of the procedure was to obtain documentation and data which will allow computation of item costs of all supplies relevant to the procedures of interest. The specific steps in the inventory item costing were:

- A list of all supply items for which cost data is required; this included non-standard supplies and direct materials, as discussed below. Each item should be identified by manufacturer's code and, if used, the facility's internal identification code.

These items were entered in the first two columns of the inventory analysis form. Exhibit A-16, following this page, illustrates the format of the inventory analysis form. Ten spaces are provided in column (1) for an internal hospital code. If no internal code is used, insert the manufacturer's code in this space. The second column, (2), is a space for entry of the item description. This includes its name, and if internal hospital codes were used for purchasing purposes, the manufacturer's code for the particular item.

- Review procurement records with hospital supply or purchasing personnel to determine the following items and enter them in the inventory analysis form:
    - The order units, generally a case (generally abbreviated "cs") or a box (generally abbreviated "bx")
    - The order cost in dollars, rounded to the nearest cent
    - The number of items per order unit.

Once the inventory item cost analysis was completed, it was possible to compute item costs for standard supply use for each procedure of interest. This was done in two ways. First for individual items, such as sutures, drapes, and gowns, individual item cost was computed. Next, the total cost of "standard packs" for each phase was computed in the conventional manner based on the total number of items included in the "standard pack".

Tracing cost data and computation of non-standard supply costs by procedure involved essentially the same procedures as described under standard supplies cost collection.

Exhibit A-16

COST DATA COLLECTION

STANDARD MATERIALS AND SUPPLIES UNIT COST ANALYSIS

1. **FACILITY (Name)** ____________________ (code) ☐☐☐

2. DATE OF COLLECTION OF DATA ☐☐ (MO.) ☐☐ (DAY) ☐☐ (YR.)

3. INVENTORY DATA

Internal Code	Item Description (Name & Mftr.'s Code)	Project Code	Order Unit	Order Cost	No. of Items Per Order Unit	Unit Cost

Direct Medications and Materials. All items classified as direct materials were classified as "non-standard". That is, there were no "standard pack" or similar grouping of items, which were consistently used as direct materials for a given procedure. Rather, direct materials consisted of those medications and like materials drawn from bulk supplies on a case-by-case basis. Generally, they are administered from a bulk supply in varying units or amounts, by case. The variance of use of these direct materilas can be great from procedure to procedure, which would effectively preclude the definition of any standardized set, or package of materials. Also, their bulk packaging often precludes pre-judgement as to unit cost. The procedure to identify the unit costs of medications and materials was equivalent to the calculation of direct supplies. Either inventory records of the facility or supplier invoices were used to provide per unit costs.

Other Direct Costs. It was not possible to obtain resource cost estimates for several services including clinical laboratory tests, radiology examinations, and pathodology tests performed in the four institutionally based surgical settings. For these services, charges were used as proxy measures of cost as discussed in the cost analysis chapter.

Indirect Costs. The basis of allocation of indirect costs was the percentage of computed direct labor costs. Total indirect costs applicable to a given surgical unit for the most recently completed fiscal period was obtained, and compared to direct labor costs applicable in the same period, in order in order to calculate a percentage relationship. This percentage relationship was then applied to actual direct labor costs observed by phase of a specific procedure, all direct and indirect costs calculated, and a total procedure cost determined. All indirect allocation cost plans and policies used by particular facilities were accepted at face value.

The Medicare Cost Reports for comparable time periods were used as the basis for the indirect cost ratio calculation for five of the six hospitals. The cost centers used in the analysis were the operating and recovery rooms for the inpatient and outpatient settings. Both of the hospitals with HAASC settings reported direct and indirect costs separately on the Medicare Cost Report for the surgical center units and for these settings separate indirect cost rates were calculated. For all facilities in which the Medicare Cost Reports were used, salaries and other direct expenses were used as the direct cost amount and all allocated costs, including depreciation, as shown by the step down method were included as indirect costs. For one hospital, the only report available at the time the study was conducted was an unaudited financial statement with cost allocated to surgery according to the accounting conventions of the facility. In this case the costs reported by the facility were used. For the Surgicenter, the Medicare Cost Report was not available at the time the cost study was conducted. In this case, indepth discussions were held with the facility's financial manager to develop appropriate ratios by line item account to separate out the surgical center costs from costs associated with the "Pain Center" which was located in the same building at the time of the study. The surgical center costs were then classified as direct (medical salaries and direct medications and supplies) and indirect (all other) costs and the indirect cost ratio was calculated.

Opportunity Cost

For the purposes of the evaluation, opportunity cost was measured in terms of foregone revenues of patients that were reported for patients who were employed, and in terms of the amount of time the patient was unable to perform his or her normal activity during each phase of the surgical episode.

The medical record and direct observations by the study team served as the primary source of time information for the pre-operative, operative, and post-operative phases of care. The patient interview was used to collect time estimates from the patient for the screening and recuperative phases of care. The information requested from the patient was as follows:

- Milestone dates and times that marked the beginning and end of the surgical care phases
- Time spent in obtaining diagnostic and treatment services during each phase of care
- Length of time in recuperation before the patient resumes normal activity
- Amount of revenues foregone by the patient as a result of the surgical episode.

Although patient income information collected in the patient interview, no attempt was made to estimate the cost of the alternative use of the patients time in the absence of specific information on foregone revenue. The patients in the sample included a large proportion of women not in the labor market and children which would further complicate the calculation of opportunity cost because of the difficulties in ascribing a specific value to the time of these patients.

QUALITY DATA COLLECTION METHODOLOGY

The quality data collection methodology was designed to obtain information on the structural, process, and outcome aspects of quality as related to surgical services at the Phoenix site. The data collection approach to each of these three major areas is discussed and the data collection instruments used are presented.

Structural Quality Data Collection

The assessment of structural quality of surgical settings was conducted for all institutions participating in the evaluation at the Phoenix site. This evaluation was performed in the following surgical settings:

- Hospital Inpatient
- Traditional Hospital Outpatient
- Hospital Affiliated Ambulatory Surgical Center
- Free Standing Ambulatory Surgical Center

A data collection instrument, the Facility Survey Report, was designed as the basis for the evaluation. The Facility Survey Report is essentially a modification of the Medicare Facility Survey and the Joint Commission on the Accreditation of Hospitals survey forms. The modifications were made to emphasize aspects of structural quality that related particularly to surgical services with more detailed questions on the regulations and policies of the Phoenix facilities governing the care of surgical patients. The Facility Survey Report was completed for each facility participating in the evaluation. The physician consultant to the project conducted indepth interviews with facility representatives including the administrator, the medical records department supervisor, the head of the medical staff, the chief of surgery, and the chief of anesthesiology to complete the information items contained in the survey. The policy manuals, regulations and bylaws of the facility and the medical staff were also reviewed in detail and a sample of medical records from each facility were examined for form and content.

The structural quality evaluation examined the following major areas of facility organization and operation:

- Compliance with State and Local Laws
- Governing Body
- Medical Staff
- Medical Records Department
- Laboratories
- Radiology Department
- Complementary Departments (including Surgery, Anesthesiology, Operating and Recovery Rooms).

The compliance of the facility with a detailed set of standards and sub-factors under each of the major areas of the survey was assessed by the physician consultant.

Process Quality Data Collection

The process quality assessments examined a relatively limited set of factors concerning the surgical process itself. No attempt was made to assess the competency of the surgeon or the efficacy of the surgical technique employed to treat a specific case. The process quality assessment focused on the factors that determined the selection of the surgical setting for patients undergoing particular types of surgeries included in the evaluation, the types of laboratory and radiology tests performed on the patient prior to surgery, the medical characteristics of the patients in terms of pre-existing conditions and medications in current use, patient demographic characteristics, the use of medications and anesthesia type, and the operative, and anesthesia time requirements.

Three primary data collection techniques were used to obtain the information required for the process quality analysis.

Medical Record Review. For each patient included in the study sample, the patients medical record was reviewed by the registered nurse data collection team and a medical record abstract was completed. The medical record abstract was designed in conjunction with the physician advisor to review and record all relevant information pertaining to the surgical case. The Medical Record Abstract Form is presented in Exhibit A-17. A comprehensive set of instructions and guidelines for completing the abstract was prepared and thoroughly reviewed with the registered nurse abstracting team. A set of test cases were abstracted and the validity and reliability of the abstracting process was assessed. Training continued until a high level of intercoder consistency was maintained. Bi-weekly meetings were held to discuss problems, coding conventions, and unusual cases.

Several problems were encountered with the categories for indications for surgery and operative findings necessitating substantial revision of these items to provide for additional valid response categories.

Each medical record was checked for consistency by the Phoenix site supervisor and a staff member of The Orkand Corporation. If miscodings or incompletions were found the original medical record was re-examined and the abstract completed or corrected.

Exhibit A-17

Medical Record Abstract

AMBULATORY SURGERY RESEARCH PROJECT SOCIAL SECURITY ADMINISTRATION	MEDICAL RECORD ABSTRACT C-O-N-F-I-D-E-N-T-I-A-L	THE ORKAND CORPORATION 8630 FENTON STREET SILVER SPRING, MD. 20910 (301) 585-8480

1.CASE #:	2.FACILITY:	3.SETTING:	4.MEDICAL RECORD #:
1-4	5-6	7	8-17

5.DATE OF SURGERY:	6.DATE OF BIRTH:	7.AGE:(years)
18-23	24-29	30-31
8.SEX: 32 Male 1 Female 2	9.HEIGHT:(inches) 33-35	10.WEIGHT:(lbs) 36-38

11.ZIP CODE: 39-43

12.RESIDENCE:		13.RACE:		14.EXPECTED PAYMENT SOURCE:	
44		45		46	
Phoenix	1	Am.Indian	1	Out-of-Pocket	1
Scottsdale	2	Asian,Pac.Islander	2	3rd. Party Private	2
Glendale	3	Black (not Hisp.)	3	Medicare	3
Tempe	4	Hispanic	4	Medicaid	4
Mesa	5	White(not Hisp.)	5	CHAMPUS	5
Other Maricopa Co.	6	Other	6	None (charity)	6
Other Arizona	7	Non-White (not spec.)	7	Other (specify)	7
Out-of-State	8		8		8
D.K.	9	D.K.	9	D.K.	9

15.INDICATIONS: (see coding list)		Yes 1	No 2	N.A 8	D.K 9
a.	47				
b.	48				
c.	49				
d.	50				
e.	51				
f.	52				
g.	53				
h.	54				

16a.PROCEDURE #1: 55-56

16b.PROCEDURE #2: 57-58

COMMENTS:

Exhibit A-17 — (cont.)

17.ADMISSION DATE: 59-64		18.ADMISSION TIME: 65-68	
19.DISCHARGE DATE: 69-74		20.DISCHARGE TIME: 75-78	

END CARD #1:79-80	01	BEGIN CARD #2: 1-4	DUP	21.PROCEDURE INCLUDED IN STUDY: 5	Yes 1 No 2	

PRE-OPERATIVE PHASE

Pre-Operative Physical Findings

22. PRE-EXISTING CONDITIONS :		Yes 1	No 2	DK 9	23. MEDICATIONS IN CURRENT USE:		Yes 1	No 2
a. Heart Disease	6				a. Steroids	23		
b. Lung Disease	7				b. Alkaloids	24		
c. Liver Disease	8				c. Tranquilizers	25		
d. Kidney Disease	9				d. Anticonvulsants	26		
e. CNS Disease	10				e. Diuretics	27		
f. Diabetes	11				f. Bronchodilators	28		
g. Bleeding Disorders	12				g. Insulin	29		
h. Allergies: Drugs	13				h. Antidepressants	30		
i. Allergies: General	14				i. Hypotensives	31		
j. Asthma	15				j. Contraceptives	32		
k. Endocrine Disorders	16				k. Antihistamines	33		
l. Major Skeletal Disorder	17				l. Hormones	34		
m. Previous Surgery	18				m. Cardiogenics	35		
n. Other	19				n. Analgesics	36		
o. Other	20				o. Anticoagulants	37		
p. Other	21				p. Antibiotics	38		
q. Other	22				q. Other	39		

24a. Blood Pressure: 40	Recorded 1		24b. Systolic :	41-43	
	Not Recorded 2		24c. Diastolic :	44-46	

25a. Pulse : 47	Recorded 1		25b. Beats/min.:	48-50	
	Not Recorded 2				

26a. Temperature: 51	Recorded 1		26b. Degrees F:	52-55	.
	Not Recorded 2				

Exhibit A-17 — (cont.)

27.ASA PHYSICAL STATUS:				COMMENTS:
	P.S. I	1		
	P.S. II	2		
	P.S. III	3		
56	P.S. IV	4		
	P.S. V	5		
	D.K.	9		

Pre-Operative Tests and Findings

28a.Blood Hemoglobin:	Performed	1		28b. Hemoglobin gms./100ml.:	
57	Not Performed	2		58-60	☐☐.☐
29a.Blood Hematocrit:	Performed	1		29b. Hematocrit %:	
61	Not Performed	2		62-63	☐☐
30a.W.B.C.	Performed	1		30b.W.B.C. Count:	
64	Not Performed	2		65-68	☐☐☐☐

31a.Urine-Analysis:				31b-e.Findings:	Present 1	Absent 2	D.K. 9
69	Performed	1					
	Not Performed	2		b. Protein 70			
COMMENTS:				c. Glucose 71			
				d. Ketones 72			
				e. Blood 73			

32a.CHEST X-RAY: 74	Taken	1		32b. CHEST FINDINGS:	Normal	1	
	Not Taken	2		75	Other	2	
32c.OTHER X-RAYS: 76	Taken	1		32d.TOTAL # OF PLATES:(inc. chest)			
	Not Taken	2		77-78			☐☐
				END CARD #2: 79-80	02	BEGIN CARD #3: 1-4	DUP

33. OTHER TESTS PERFORMED: (specify)			
a.	05-06		
b.	07-08		
c.	09-10		
d.	11-12		
e.	13-14		
f.	15-16		
g.	17-18		
h.	19-20		
i.	21-22		

Exhibit A-17 — (cont.)

34.VISIT PRIOR TO SURGERY: 23	Yes	1		35. # OF VISITS:	24	
	No	2				
	D.K.	9				
36.DATE OF 1ST. VISIT:	25-30			37. DATE OF 2ND. VISIT:	31-36	

38.MEDICATIONS USED IN PRE-OP PHASE

NAME (specify)	CODE	QUANTITY	UNIT	UNIT CODE
(specify)	37-39	40-43	specify	44
a.				
b.	45-47	48-51		52
c.	53-55	56-59		60
d.	61-63	64-67		68
e.	69-71	72-75		76

END CARD #3: 79-80	03	BEGIN CARD #4: 1-4	DUP

39. SPECIAL SUPPLIES USED IN PRE-OP PHASE

a.	05-06		
b.	07-08		
c.	09-10		
d.	11-12		

40. SPECIAL EQUIPMENT USED IN PRE-OP PHASE

a.	13-14		
b.	15-16		
c.	17-18		
d.	19-20		

COMMENTS:

OPERATIVE PHASE

41.OPERATION DATE: 21-26	42.SCHEDULED OPERATION TIME: 27-30

43a.SURGEON #1 NAME: 31-35	43b.AFFILIATION: 36	House Staff	1
		Private	2
		N.A.	8
44a.SURGEON #2 NAME: 37-41	44b.AFFILIATION: 42	House Staff	1
		Private	2
		N.A.	8

45a.ANESTHESIOLOGIST #1 NAME: 43-47	45b.AFFILIATION: 48	House Staff	1
		Private	2
		N.A.	8
46a.ANESTHESIOLOGIST #2 NAME: 49-53	46b.AFFILIATION: 54	House Staff	1
		Private	2
		N.A.	8

47a.ANESTHESIA TIME: FROM 55-58	47b.ANESTHESIA TIME: TO 59-62
48a.OPERATION TIME: FROM 63-66	48b.OPERATION TIME: TO 67-70

49. OPERATIVE FINDINGS: (see coding list)		Yes 1	No 2	NA 8	DK 9
a.	71				
b.	72				
c.	73				
d.	74				
e.	75				
f.	76				
g.	77				
h.	78				

COMMENTS:	END CARD #4: 79-80	04	BEGIN CARD #5: 1-4	DUP

50. ANESTHETIC TYPE:

5

General	1	
Regional/Block	2	
Local	3	
None	4	
D.K.	5	

COMMENTS:

51. ANESTHESIA SUPPLIES USED:		Yes 1	No 2
a. N_2O	6		
b. O_2	7		
c. Fluothane	8		
d. Barbituates	9		
e. D. Turo.	10		
f. Anectine	11		
g. Other (specify)	12		
h. Other (specify)	13		
i. Other (specify)	14		

52. MEDICATIONS USED IN OP PHASE

NAME (specify)	CODE	QUANTITY	UNIT specify	UNIT CODE
	15-17	18-21		22
a.				
	23-25	26-29		30
b.				
	31-33	34-37		38
c.				
	39-41	42-45		46
d.				

53. SPECIAL SUPPLIES USED IN OP PHASE

a.	47-48		
b.	49-50		
c.	51-52		
d.	53-54		

54. SPECIAL EQUIPMENT USED IN OP PHASE

a.	55-56		
b.	57-58		
c.	59-60		
d.	61-62		

COMMENTS:

55a.Return to OR Required: 63	Yes 1 No 2		55b.Return OR Time: FROM 64-67		55c.Return OR Time: TO 68-71	

END CARD #5: 79-80	05	BEGIN CARD #6: 1-4	DUP

POST-OPERATIVE PHASE

56a.RECOVERY ROOM TIME: FROM 5-8		56b.RECOVERY ROOM TIME: TO 9-12	

57.MEDICATIONS USED IN POST-OP PHASE

NAME	CODE	QUANTITY	UNIT	UNIT CODE
specify	15-17	18-21	specify	22
a.				
b.	23-25	26-29		30
c.	31-33	34-37		38
d.	39-41	42-45		46

58.SPECIAL SUPPLIES USED IN POST-OP PHASE

a.	47-48	
b.	49-50	
c.	51-52	
d.	53-54	

59.SPECIAL EQUIPMENT USED IN POST-OP PHASE

a.	55-56	
b.	57-58	
c.	59-60	
d.	61-62	

60a.Return to RR Required: 63	Yes 1 No 2		60b.Return RR Time: FROM 64-67		60c.Return RR Time: TO 68-71	

END CARD #6: 79-80	06	BEGIN CARD #7: 1-4	DUP

Exhibit A-17 -- (cont.)

RECUPERATION PHASE (in surgical facility)

61a.WARD TIME: FROM	5-8		61b.WARD TIME: TO	9-12	

62.MEDICATIONS USED IN RECUP PHASE

NAME	CODE	QUANTITY	UNIT	UNIT CODE
specify	15-17	18-21	specify	22
a.				
	23-25	26-29		30
b.				
	31-33	34-37		38
c.				
	39-41	42-45		46
d.				

63.SPECIAL SUPPLIES USED IN RECUP PHASE

a.	47-48	
b.	49-50	
c.	51-52	
d.	53-54	

64.SPECIAL EQUIPMENT USED IN RECUP PHASE

a.	55-56	
b.	57-58	
c.	59-60	
d.	61-62	

COMMENT:	END CARD #7: 79-80	07	BEGIN CARD #8: 1-4	DUP

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COMPLICATIONS AND FURTHER PROCEDURES

65. COMPLICATIONS	OPERATIVE			POST-OP			RECUPERATIVE				66. Further Procedures:	Yes 1	No 2
	cc	Yes 1	No 2	cc	Yes 1	No 2	cc	Yes 1	No 2	NA 8			
a.Hemorrhage	5			6			7				a.G.U. Cath. 44		
b.Shock	8			9			10				b.Intubation 45		
c.Cardiac Arrest	11			12			13				c.Transfusion 46		
d.Cardiac Arrhythmia	14			15			16				d.Other(specify) 47		
e.Aspiration	17			18			19				e.Other(specify) 48		
f.Urinary Retention	20			21			22				COMMENTS:		
g.Abnormal Bleeding	23			24			25						
h.Hypotension	26			27			28						
i.Hypertension	29			30			31						
j.Anaphylaxis	32			33			34						
k.Nausea	35			36			37						
l.Vomiting	38			39			40						
m.Pain	41			42			43						

67a.PATHOLOGY PERFORMED:			67c.PATH.REPORT:	Normal 1		COMMENT:
49	Yes 1			Benign 2		
	No 2		51	Malignant 3		
67b.FROZEN SECTION:	Yes 1			Other 4		
50	No 2			N.A. 8		
	N.A. 8			D.K. 9		

68.TRANSFER STATUS:			69a.FOLLOW-UP CONTACT:			69b.FOLLOW-UP REPORT:		
52	Home 1		53	Not Attempted 1		54	No Problems 1	
	Inpatient,regular 2			Not Completed 2			Minor Problems 2	
	Inpatient,special 3			Completed 3			Other(specify) 3	
	Other (specify) 4			N.A. 8			N.A. 8	
	D.K. 9			D.K. 9			D.K. 9	

COMMENTS:	70. CODER: 55-56	71.DATE CODED:57-62
		END CARD #8: 79-80 08

Patient Interview. The patient interview was used to obtain information from the patient that was not available by means of direct observation during the pre-operative, operative, and post-operative phases. The patient interview was also the only method by which the characteristics of patient care in the screening and recuperation phases were assessed. The patient interview was conducted on a face-to-face basis in the patients home from one to three months after the surgery. All interview appointments were scheduled in advance and the patients were asked to have copies of all bills, receipts, or insurance forms relevant to the surgical episode ready for the registered nurse interviewer to review.

The interview instrument has three major sections. The first section assessed all services and charges incurred by the patient and his family during the surgical episode. This section of the interview established the referral date for surgery that marked the beginning of the screening phase and the date of return to normal activity that marked the end of the recuperation phase. The second section of the interview concentrated on the patient's perceptions of the surgical episode in terms of satisfactions, dissatisfactions, and the resolution of the problem for which the patient was treated. The last section of the interview obtained general information on the patient's background and general health. The patient interview instrument is given in Exhibit A-18.

Physician Questionnaire. The third data collection instrument that was used to obtain process quality of care information was the Physician Questionnaire presented in Exhibit A-19. The objective of the questionnaire was to gather information on the standards of surgical practice in the Phoenix area for the twelve surgical procedures included in the study. The process quality evaluation required data on the standards implicitly or explictly used to select among alternative surgical settings and the treatment characteristics and screening procedures recommended for

Exhibit A-18

Patient Interview Questionnaire

AMBULATORY SURGERY RESEARCH PROJECT SOCIAL SECURITY ADMINISTRATION SSA-3214	PATIENT INTERVIEW QUESTIONNAIRE	THE ORKAND CORPORATION 8630 FENTON STREET SILVER SPRING, MD. 20910 (301) 585-8480

NOTE: All information which would permit identification of the individual will be held in strict confidence, will be used only by persons engaged in and for the purposes of the survey.	1. Case #: (1-4)

2. Procedure: (5-6)	3. Facility: (7-8)	4. Setting: (9)	5. Procedure Date: (10-15)

Record of Telephone Calls

Date	Begin Time	End Time	Com.
1			
2			
3			
4			
5			
6			
7			

Record of Personal Calls

Date	Begin Time	End Time	Com.
1			
2			
3			
4			
5			
6			
7			

6. Noninterview Reason: (16)

Refusal - describe below	1
No One At Home - repeated calls	2
Temporarily Absent	3
Other - specify below	4

7a. # Telephone Calls: (17-18)	7b. Telephone Time: (19-21)	8a. # Personal Calls: (22-23)	8b. Personal Time: (24-26)	9. Interviewer Name: (27-28)

DETACH

DETACH

Patient's Exact Name: (Last, First, M.I.)

Respondents Exact Name, If Not Patient: (Last, First, M.I.)

Respondent's Exact Address:
Street:
City: State: Zip:

Respondent's Telephone Number: Home: Work:	Case#:

Exhibit A-18 — (cont.)

Good morning/afternoon/evening, my name is ____________________. I am with the Ambulatory Surgery Research Project, sponsored by the Social Security Administration and being conducted by The Orkand Corporation. As you will remember, you agreed to assist us in the study when you were admitted to ________________________ for your recent surgery. I would like to talk with you for about 30 to 45 minutes to help us in our research.

The questions I would like to discuss with you are divided into three major sections. In the first section, I would like to go over with you very carefully all of the costs associated with the recent surgery from the time it was first decided that the operation would be performed to the time you were fully recovered and returned to normal activity. In the second section, I would like to ask you about your satisfactions and dissatisfactions with the surgery and the events associated with it. We will also talk about how long it took you to fully recover and whether you had any disabilities or limitations during the recovery period. In the last section, I will be asking you some very general background information about your family and your family's health.

I would like to emphasize that anything you tell me will be held in the strictest confidence and will not be voluntarily released to any person or organization. Information will be given to other organizations only in such form that individuals cannot be identified.

If you have any questions during our discussion, please be sure to let me know. It is important that you understand every question that I ask and give as complete an answer as you can.

Before we start I would like to check if you have assembled the copies of the bills related to the recent surgery as we discussed over the phone. (If these have not been collected together, would it be possible to have someone do this while we proceed with the rest of the interview. In addition, I would like to verify the following information:

PROCEDURE:________________________________ DATE OF PROCEDURE:________________________

FACILITY:_________________________________ SETTING:_______________________________

(IF THE INFORMATION GIVEN ABOVE IS CORRECT, CONTINUE INTERVIEW. IF INCORRECT, PLEASE MAKE APPROPRIATE CHANGES AND CONTINUE INTERVIEW)

(NOW VERIFY/COMPLETE THE INFORMATION ON THE BOTTOM OF THE FIRST PAGE.)

10. Patient Date of Birth

(29-34) ☐☐☐☐☐☐

Patient Age:

11. Relationship of Respondent to Patient:

	Same	1	
	Mother	2	
(35)	Father	3	
	Legal Guardian	4	
	Other (specify)	5	

PART I. COSTS AND TIME

A. Screening Phase

12a. Who does (the patient) normally go to when (the patient) has a medical problem? Do you go to a:

	Family Physician	(36)	____-1
	Specialty Physician		____-2
	Outpatient Clinic		____-3
(36)	H.M.O.(Health Maintenance Organization)		____-4
	Emergency Room		____-5
	Other (specify)		____-6
	Don't Know		____-9

12b. What is the name of the physician/facility________________________________
____(37-41)(_ _ _ _)

If a physician go to 12c
If a facility go to 13a

Exhibit A-18 — (cont.)

12c. Was this doctor the first doctor the patient saw about the problem that resulted in surgery?

Yes . . . . . (42)____-1 Go to 14
No . . . . ____-2) Go to 13b

13a. Was it a doctor at (facility named above) who was the first doctor (the patient) saw about the problem that resulted in the surgery?

Yes . . . . . (43(____-1 Go to 14
No . . . . ____-2) Go to 13b

13b. Who was the first doctor (the patient) saw about the problem that resulted in the surgery?

Name:________________________________(44 - 48(_ _ _ _ _)

14. What was the date of (the patient's) visit to that doctor?

Date: (49 - 54(__ __/ __ __/ __ __)
m d y

15. How long before (the patient) went to the doctor was (the patient) bothered by the problem that resulted in the surgery?

# Days: (55-56(__ __)

16a. Did the first doctor refer (the patient) to another doctor for the surgery?

Yes . . . . . . (57(____-1
No . . . . ____-2 Go to 18

16b. What is the name of the doctor (the patient) was referred to:

Name: ________________________________
________________________________ (58-59(__ __)

17. What was the date of the visit to that doctor?

Date: (60-65(__ __/ __ __/ __ __)
d m y

18. When did (the patient) and a doctor first agree that the surgery would be necessary?

Date: (66-71(__ __/ __ __/ __ __)
d m y

End Card 1(80)	1	Begin Card 2(1-4)	DUP

19. Including the visit in which the decision was made that surgery was necessary, how many times did (the patient) go to a doctor's office, a clinic, or a hospital for shots, x-rays, tests, or examinations before being admitted to (name of facility) for the surgery?

a) # Doctor's Office Visits. . . . . (5- 6 (___ ___)
b) # Clinic Visits . . . . (7- 8 (___ ___)
c) # Ambulatory Surgery Center Visits(9-10 (___ ___)
d) # Hospital Visits . . . . (11-12 (___ ___)
e) # Other Visits. . . . . (13-14 (___ ___)
f) # Total Visits. . . . . (15-16 (___ ___)

20. How many hours do you estimated (the patient) spent in obtaining and using the services prior to admission to the facility in which surgery was performed?

Hours: (17-19 (___ ___ ___)

In answering question number 21, the following categories of services should be considered:

- Doctor's Examination Fees
- Laboratory Fees
- X-rays
- Medicine (both prescription and non-prescription)
- Special Supplies
- Special Equipment
- Special Services

Exhibit A-18 — (cont.)

(The Interviewer should try at this point to fill in the Charge Code Sheets with the data on the screening portion of surgical episode. The Charge Code Sheets are located at the end of the questionnaire and will set the stage for asking the following question.)

21. During the period of time prior to surgery did (the patient) incur and of the following costs because of the problem that resulted in surgery?
(This item only applies to the patient.)

Sick leave	21a. (20)	Yes 1 No 2 D.K. 9		21b. # Days (21-23)		
Lost Wages	21c. (24)	Yes 1 No 2 D.K. 9		21d. (25-29)	Dollars	Cents
Baby Sitting/Child Care	21e. (30)	Yes 1 No 2 D.K. 9		21f. (31-35)	Dollars	Cents
Transportation (# trips ___ x # miles per trip ___ = total miles ___ x 12¢ per mile = total cost	21g. (36)	Yes 1 No 2 D.K. 9		21h. (37-41)	Dollars	Cents
Parking/Tolls	21i. (42)	Yes 1 No 2 D.K. 9		21j. (43-47)	Dollars	Cents
Overnight Expenses	21k. (48)	Yes 1 No 2 D.K. 9		21l. (49-53)	Dollars	Cents
Meals	21m. (54)	Yes 1 No 2 D.K. 9		21n. (55-59)	Dollars	Cents
Other (specify)	21o. (60)	Yes 1 No 2 D.K. 9		21p. (61-65)	Dollars	Cents
Other (specify)	21q. (66)	Yes 1 No 2 D.K. 9		21r. (67-71)	Dollars	Cents
Other (specify)	21s. (72)	Yes 1 No 2 D.K.		215. (73-77)	Dollars	Cents
		End Card 2	2	Begin Card 3(1-4)	DUP	

Exhibit A-18 — (cont.)

22. During the period of time prior to the admittance to a facility for the surgery did a family member (including parents or guardians) or friend incur any of the following costs as a result of staying with, helping, or going to the doctor with (the patient) because of the problem that resulted in surgery?

Sick leave/Vacation	22a.	Yes 1 No 2 D.K. 9		22b. # Days (6-8)		
Lost Wages	22c. (9)	Yes 1 No 2 D.K. 9		22d. (10-14)	Dollars	Cents
Baby Sitting/Child Care	22e. (15)	Yes 1 No 2 D.K. 9		22f. (16-20)	Dollars	Cents
Transporation (# trips ___ x # miles per trip ___ = total miles ___ x 12¢ per mile = total cost	22g. (21)	Yes 1 No 2 D.K.		22h. (22-26)	Dollars	Cents
Parking/Tolls	22i. (27)	Yes 1 No 2 D.K. 9		22j. (28-32)	Dollars	Cents
Overnight Expenses	22k. (33)	Yes 1 No 2 D.K. 9		22l. (34-38)	Dollars	Cents
Meals	22m. (39)	Yes 1 No 2 D.K. 9		22n. (40-44)	Dollars	Cents
Other (specify)	22o. (45)	Yes 1 No 2 D.K. 9		22p. (46-50)	Dollars	Cents
Other (specify)	22q. (51)	Yes 1 No 2 D.K. 9		22r. (52-56)	Dollars	Cents
Other (specify)	22s. (57)	Yes 1 No 2 D.K. 9		22t. (58-62)	Dollars	Cents
		End Card 3	3	Begin Card 4(1-4)	DUP	

23a. During the period before the surgery, did (the patient) stay in bed because of the problem that resulted in surgery?

Yes . . . . . . (5(____-1 Go to 23b
No . . . . ____-2 Go to 24)

23b. During that period before surgery, how many days did (the patient) stay in bed all or most of the day because of the problem that resulted in surgery?

# Days: (6-7(___ ___)

(Question 24 should only be asked to work-age population.)

24. During that period before surgery, how many days did the problem keep (the patient) from work?

Days: (8-9(___ ___)

(Question 25 should be asked to all but patients who are infants.)

25. During that period before surgery, how many days did the problem keep (the patient) from school?

Days: (10-11(___ ___)

(IF NO DAYS IN QUESTIONS 24 AND 25, GO TO 27a.)

26. On how many of these days from work/school did (the patient) stay in bed all or most of the day?

Days: (12-13(___ ___)

27a. NOT COUNTING the day(s) in bed lost from /work/ school/ household duties/ play/ normal activities/ were there any (other days during the period before surgery that (the patient) cut down on the things (the patient) usually does because of the problem?

Yes . . . . (14(____-1
No . . . . ____-2 Go to 28a

27b. How many days?

Days: (15-16 (___ ___)

B. Pre-Op, Operative, Post-Op, and Surgical Setting Recuperation Phases

28a. For this surgery, was (the patient) given a choice as to the surgical facility?

Yes . . . . (17 (____ -1 Go to 28b
No. . . . . ____ -2 Go to 28d

28b. In this choice of facility, what factors were most important in your decision?

Describe: ______________________________ (18-19 (___ ___)
____
____
______________________________ (20-21 (___ ___)
____
____
______________________________ (22-23 (___ ___)
____
____

28c. Would you say that (item in list) was important in the final choice of surgical facility?

a) Out of Pocket Costs. . . . . Yes (24(___-1
No ___-2)
b) Payment Policy of Your Insurance Company . Yes (25(___-1
No ___-2)
c) Convenience of Facility. . . . . Yes (26(___-1
No ___-2)
d) Preference of Surgeon. . . . . Yes (27(___-1
No ___-2)
e) Length of Necessary Hospitalization. . . . Yes (28(___-1
No ___-2)
f) Your Previous Personel Experience with Facility . . . . Yes (29(___-1
No ___-2)
g) Experience of Family and/or Friends with With Facility. . . . . Yes (30(___-1
No ___-2)

28d. On what day of the week did (the patient) have surgery?

Monday . . . . . (31 (____ -1
Tuesday. . . . . . . ____ -2
Wednesday. . . . . . ____ -3
Thursday . . . . . . ____ -4
Friday . . . . ____ -5
Saturday . . . . . . ____ -6
Sunday . . . . ____ -7
D.K. . . . . ____ -8)

29. Did (the patient), the doctor, or both select this day for surgery?

Patient. . . . . (32 (____ -1
Doctor . . . . ____ -2
Both . . . . ____ -3
D.K. . . . . ____ -9)

30. Why did you choose this particular day selected for the surgery? (RECORD OPEN-ENDED RESPONSES IN ORDER TO IMPORTANCE)

____ (____ ____)
____
____ (____ ____)
____
____ (____ ____)
____
____ (____ ____)
____

31. What day of the week did (the patient) go into the facility?

Monday . . . . . (41 (____ -1
Tuesday. . . . . . . ____ -2
Wednesday. . . . . . ____ -3
Thursday . . . . . . ____ -4
Friday . . . . ____ -5
Saturday . . . . . . ____ -6
Sunday . . . . ____ -7
D.K. . . . . ____ -8)

32. What time was that? (approx.) (42-45 (___ ___ ___ ___)

33. What day of the week did (the patient) leave the facility?

Monday . . . . . (46 (____ -1
Tuesday. . . . . . . ____ -2
Wednesday. . . . . . ____ -3
Thursday . . . . . . ____ -4
Friday . . . . ____ -5
Saturday . . . . . . ____ -6
Sunday . . . . ____ -7
D.K. . . . . ____ -8)

34. What time was that? (approx.) (47-50 (___ ___ ___ ___)

35a. Did (the patient) buy anything special knowing he would be going into the facility for surgery (new robe, books, etc.)?

Describe: ____
____ Yes (51(___ -1
____ No ___ -2) Go to 36
____

Exhibit A-18 — (cont.)

35b. What was the cost?

Dollars	Cents

End Card 4(80)	4	Begin Card 5(1-4)	DUP

(The Interviewer should try at this point to fill in the Charge Code Sheets for the Pre-Op, Operative, Post-Op and Surgical Setting Recuperation phases. The same Charge Code Sheets should be used and the new data entered immediately after the previous data. The following is a list of possible charge areas.)

- Surgeon Fees
- Anesthesiologist Fees
- Pathologist Fees
- Facility Fees
- Laboratory Fees
- X-rays
- Medicine and Drugs

36. During the period of time (the patient) was in the facility for the surgery did (the patient) incur any of the following costs?

Sick Leave/Vacation	36a. (5)	Yes 1 No 2 D.K. 9		36b. # Days (6-10)		
Lost Wages	36c. (11)	Yes 1 No 2 D.K. 9		36d. (12-16)	Dollars	Cents
Baby Sitting/Child Care	36e. (17)	Yes 1 No 2 D.K. 9		36f. (18-22)	Dollars	Cents
Other (Specify)	36g. (23)	Yes 1 No 2 D.K. 9		36h. (24-28)	Dollars	Cents
Other (Specify)	36i. (29)	Yes 1 No 2 D.K. 9		36j. (30-34)	Dollars	Cents
Other (Specify)	36k. (35)	Yes 1 No 2 D.K. 9		36l. (36-40)	Dollars	Cents

End Card 5	5	Begin Card 6(1-4)	DUP

Exhibit A-18 — (cont.)

37. During the period of the time (the patient) was in the facility for the surgery did (family members or friends) incur any of the following costs?

Sick leave/Vacation	37a. (5)	Yes 1 No 2 D.K. 9		37b. # Days (6-10)		
Lost Wages	37c. (11)	Yes 1 No 2 D.K. 9		37d. (12-16)	Dollars	Cents
Baby Sitting/Child Care	37e. (17)	Yes 1 No 2 D.K. 9		37f. (18-22)	Dollars	Cents
Transportation (# trips ___ x # miles per trip ___ = total miles ___ x 12¢ per mile = total cost	37g. (23)	Yes 1 No 2 D.K. 9		37h. (24-28)	Dollars	Cents
Parking/Tolls	37i. (29)	Yes 1 No 2 D.K. 9		37j. (30-34)	Dollars	Cents
Overnight Expenses	37k. (35)	Yes 1 No 2 D.K. 9		37l. (36-40)	Dollars	Cents
Meals	37m. (41)	Yes 1 No 2 D.K. 9		37n. (42-46)	Dollars	Cents
Other (Specify)	37o. (47)	Yes 1 No 2 D.K. 9		37p. (48-52)	Dollars	Cents
Other (Specify)	37q. (53)	Yes 1 No 2 D.K. 9		37r. (54-58)	Dollars	Cents
Other (Specify)	37r. (59)	Yes 1 No 2 D.K. 9		37t. (60-64)	Dollars	Cents
		End Card 6	6	Begin Card 7(1-4)		DUP

Exhibit A-18 — (cont.)

C. RECUPERATIVE PHASE

38a. Where did (the patient) immediately go when released from the facility in which the surgery was performed?

Home . . . . (5(____ -1 Go to 40
Hospital (regular - planned) . . . . ____ -2
Hospital (special - unplanned) . . . . . . ____ -3
Long term care facility (skilled nursing). ____ -4
Long term care facility (intermediate) . . ____ -5
Convalescent facility. . . . . ____ -6
Personal care home . . . . ____ -7
Other (specify). . . . . ____ -8)

38b. Is this facility the patient's normal permanent residence?

Yes . . . . (6 ____ -1
No. . . . . . ____ -2)

38c. What was the name of the facility (the patient) was transferred to:

______________________________________ (7-8 (___ ___)

39a. How long was (the patient) in this hospital or facility?

Days: (9-10 (___ ___)

39b. What day was (the patient) released from this facility?

(11-16 (___ ___/___ ___/___ ___)
m d y

40. Due to the surgery, did (the patient) have to return to the (name of facility in which surgery performed)?

Yes . . . . (17 ____ Go to 41b
No. . . . . ____ -2)

41a. Did (the patient) have to go to another hospital or facility?

Yes . . . . (18 ____ -1
No. . . . . ____ -2) Go to 42a

41b. What was the data and time of the return?

DATE (19-24 (___ ___/___ ___/___ ___)
m d y

TIME (25-28 (___ ___ ___ ___)

41c. What was the date and time (the patient) left the facility?

DATE (29-34 (___ ___/___ ___/___ ___)
m d y

TIME (35-38 (___ ___ ___ ___)

Exhibit A-18 -- (cont.)

42a. By what date and time after the surgery had (the patient) returned to a regular routine (work, school, household duties, etc.)?

DATE (39-44 (___ ___/___ ___/___ ___)
m d y

TIME (45-48 (___ ___ ___ ___)

42b. What was the date of the last visit to the doctor for the purpose of following up the results of the surgery?

(49-54 (___ ___/___ ___/___ ___)
m d y

43a. Including all of the visits made after the day (the patient) was released from the facility where the surgery was performed until the final doctor's visit, how many times did (the patient) go to a doctor's office, a clinic, a hospital, or an emergency room for examinations, shot, X-rays, or tests related to the surgery?

a. # Doctor Office Visits. . . . . (55-56 (___ ___)
b. # Clinic Visits . . . . (57-58 (___ ___)
c. # Ambulatory Surgical Center Visits . . (59-60 (___ ___)
d. # Hospital Visits . . . . (61-62 (___ ___)
e. # Emergency Room Visits . . . . (63-64 (___ ___)
f. # Other Visits. . . . . (65-66 (___ ___)
g. # Total Visits. . . . . (67-68 (___ ___)

43b. Please describe, in detail, any problems (the patient) had during the recuperation period.

(69-70 (___ ___)
(71-72 (___ ___)
(73-74 (___ ___)
(75-76 (___ ___)

In answering question number 44, the following categories of services should be considered:

- Doctor's Examination Fees
- Laboratory Fees
- X-rays
- Medicine (both prescription and non-prescription)
- Special Supplies
- Special Equipment
- Special Services
- Facility Fees
- Nursing Fees

44. How many hours do you estimate (the patient) spent in obtaining and using the services required during the time after surgery?

Hours: (77-79 (___ ___ ___)

End Card 7(80)	7	Begin Card 8(1-4)	DUP

Exhibit A-18 — (cont.)

(The Interviewer should try at this point to fill in the Charge Code Sheets with the data on the Recuperative Phase of the surgical episode.)

45. During the recuperative period, after release from the facility where the surgery was performed, did (the patient) incur any of the following costs because of the surgery?

Sick leave/Vacation	45a. (5)	Yes 1 No 2 D.K.		45b. # Days (6-10)		
Lost Wages	45c. (11)	Yes 1 No 2 D.K. 9		45d. (12-16)	Dollars	Cents
Baby Sitting/Child Care	45e. (17)	Yes 1 No 2 D.K. 9		45f. (18-22)	Dollars	Cents
Transportation (# trips ___ x # miles per trip ___ = total miles ___ x 12¢ per mile = total cost	45g. (23)	Yes 1 No 2 D.K. 9		45h. (24-28)	Dollars	Cents
Parking/Tolls	45i. (29)	Yes 1 No 2 D.K. 9		45j. (30-34)	Dollars	Cents
Overnight Expenses	45k. (35)	Yes 1 No 2 D.K. 9		45l. (36-40)	Dollars	Cents
Meals	45m. (41)	Yes 1 No 2 D.K. 9		45n. (42-46)	Dollars	Cents
Other (Specify)	45o. (47)	Yes 1 No 2 D.K. 9		45p. (48-52)	Dollars	Cents
Other (Specify)	45q. (53)	Yes 1 No 2 D.K. 9		45r. (54-58)	Dollars	Cents
Other (Specify)	45s. (59)	Yes 1 No 2 D.K. 9		45t. (60-64)	Dollars	Cents

End Card 8	8	Begin Card 9(1-4)	DUP

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46. During the recuperative period, after release from the facility where the surgery was performed, did a family member (including parents or guardians) or friend incur any of the following costs as a result of staying or helping, or going to the doctor with (the patient) because of the surgery?

Sick leave/Vacation	46 a. (5)	Yes 1 No 2 D.K. 9	46 b. Days (6-10)		
Lost Wages	46 c. (11)	Yes 1 No 2 D.K. 9	46 d. $ (12-16)	Dollars	Cents
Baby Sitting/Child Care	46 e. (17)	Yes 1 No 2 D.K. 9	46 f. $ (18-22)	Dollars	Cents
Transportation (#Trips - x# miles per trip ___= total miles____ x 12c per mile = total cost ____	46 g. (23)	Yes 1 No 2 D.K. 9	46h. $ (24-28)	Dollars	Cents
Parking/Tolls	46 i. (29)	Yes 1 No 2 D.K. 9	46J. $ (20-34)	Dollars	Cents
Overnight Expenses	46 k. (35)	Yes 1 No 2 D.K. 9	46 l. $ (30-40)	Dollars	Cents
Meals	46 m. (41)	Yes 1 No 2 D.K. 9	46n. $ (42-46)	Dollars	Cents
Other (specify)	46 o. (47)	Yes 1 No 2 D.K. 9	46p. $ (43-52)	Dollars	Cents
Other (specify	46 q. (53)	Yes 1 No 2 D.K. 9	46r. (54-58)	Dollars	Cents
Other (specify	46 s. (59)	Yes 1 No 2 D.K. 9	46t. (60-64)	Dollars	Cents
	End Card 9	9	Begin Card 10 (1-4)	DUP	

Exhibit A-18 — (cont.)

47a. During the recuperation period after release from the facility where the surgery was performed, did (the patient) stay in bed because of the surgery?

Yes . . . . . (5(____-1 Go to 47b
No . . . . ____-2 Go to 48

47b. During the recuperation how many days did (the patient) stay in bed all or most of the day?
Days (6-7(___ ___)

(Question 48 should be asked only to work-age patients.)

48. During the recuperation period how many days did the surgery keep (the patient) from work?
Days (8-9(___ ___)

(Question 49 should not be asked to patients who are infants.)

49. During the recuperation period, how many days did the surgery keep (the patient) from school?
Days (10-11(___ ___)

(IF NO DAYS ON QUESTIONS 48 AND 49 GO TO 50b.)

50a. On how many of these days lost from work/school did (the patient) stay in bed all or most of the day?
Days (12-13(___ ___)

50b. Not counting the day(s) in bed/lost from work/ lost from school/household activities/ play; were there any (other)days during the period after surgery that (the patient) cut down on the things (the patient) usually does because of the surgery?

Yes . . . . . (14(____-1) Go to 50c
No . . . . .____-2) Go to 51a
D.K. . . . . .____-9)

50c. How many days?
# Days (15-16(___ ___)

51a. Will any other source, besides the patient and his family pay any of the total costs of the surgical episodes.

Yes . . . . .(17(____-1
No . . . . ____-2) Go to 52a

51b. What are these sources?

a) Free from Doctor/Facility	Yes.......(18(	__________-1
	No.......	__________-2
b) Private Health Insurance	Yes.......(19(	__________-1
	No.......	__________-2)
c) Medicare	Yes.......(20(	__________-1
	No.......	__________-2)
d) Welfare (Medicaid)	Yes.......(21(	__________-1
	No.......	__________-2)
e) Champus	Yes.......(22)	__________-1
	No.......	__________-2)
f) Other (specify	(23(	__________
g) Don't Know	(24(	__________-1)

51c. How much of the professional fees, facility fees, nursing service, presciptions, special equipment, or laboratory tests will (the patient) or his family have to pay out of pocket.

(25-30(___ ___ ___ ___.___ ___)

(If the respondent is unable to give a dollar value when he/she should be asked to estimate the per cent of total costs paid out-of-pocket)

percent (____ ____)

Exhibit A-18 -- (cont.)

SECTION II. ATTITUDES

52. Has (the patient) had surgery previous to this surgery?

Yes . . . (31(__________ -1 GO TO 52b
No . . . . . __________ -2 GO TO 55
D.K. . . . . __________ -9) GO TO 55

52b. How many times has (the patient) had surgery prior to this surgery?
(32-33 (___ ___)

52c. How many of these surgeries were done on an outpatient basis (did not stay overnight)?

(34-35 (___ ___)

52d. How many of these surgeries were done on an inpatient basis (one or more nights in a hospital)?
(36-37 (___ ___)

53. How many years ago was the most recent surgery?
(38-39 ( )

54. In general how satisfied was (the patient) with the recent surgery as compared with the previous experience? Would say (the patient) was:

Much more satisfied . . . (40(__________ -1
Somewhat more satisfied . . . __________ -2
About the same .... __________ -3
Somewhat less satisfied . . . __________ -4
Much less satisfied . . . . . __________ -5
N.A. . . . . __________ -8
D.K. . . . . __________ -9)

55. How important to (the patient) was it to have the recent surgery performed. Would you say it was:

Very important. . . . . . (41) __________ -1
Somewhat important. . . . . . __________ -2
Slightly important. . . . . . __________ -3
Not important at all. . . . . __________ -4
D.K. . . . . __________ -9)

56. Would (the patient) have considered delaying the surgery if the scheduled time had become inconvenient?

Yes . . . (42(__________ -1
No . . . . __________ -2
D.K. . . . __________ -9)

57a. How important do you feel (READ FIRST ITEM ON LIST) was in making your decision to have the surgery - very important, somewhat important, slightly important or not important at all?

	(CONTINUE WITH NEXT ITEM)		Very Important	Somewhat Important	Slightly Important	Not Important At All	Not Sure
a.	Cost of surgery	(43 (	______-1	______-2	______-3	______-4	______-5)
b.	Amount of time involved	(44 (	______-1	______-2	______-3	______-4	______-5)
c.	Availability of Doctor	(45	______-1	______-2	______-3	______-4	______-5)
d.	Necessity for follow-up visits	(46	______-1	______-2	______-3	______-4	______-5)
e.	Concern about surgery results	(47 (	______-1	______-2	______-3	______-4	______-5)
f.	Doctors qualifications	(48 (	______-1	______-2	______-3	______-4	______-5)
g.	Insurance coverage	(49 (	______-1	______-2	______-3	______-4	______-5)
h.	Family Responsibilities	(50 (	______-1	______-2	______-3	______-4	______-5)
i.	Doctors attitudes	(51 (	______-1	______-2	______-3	______-4	______-5)
j.	Concern about pain	(52 (	______-1	______-2	______-3	______-4	______-5)
k.	Loss of income	(53 (	______-1	______-2	______-3	______-4	______-5)

57b. How important do you fee (READ FIRST ITEM ON LIST) was in making your decision about the surgical facility - very important, somewhat important, slightly important or not important at all?

	(CONTINUE WITH NEXT ITEM)		Very Important	Somewhat Important	Slightly Important	Not Important At All	Not Sure
a.	Location of facility	(54 (	______-1	______-2	______-3	______-4	______-5)
b.	Transportation & parking	(55 (	______-1	______-2	______-3	______-4	______-5)
c.	Appearance of facility	(56 (	______-1	______-2	______-3	______-4	______-5)
d.	Cleanliness of facility	(57 (	______-1	______-2	______-3	______-4	______-5)
e.	Patient Privacy	(58 (	______-1	______-2	______-3	______-4	______-5)
f.	Quality of service	(59 (	______-1	______-2	______-3	______-4	______-5)
g.	Staff of the facility	(60 (	______-1	______-2	______-3	______-4	______-5)
h.	Convenience for family	(61 (	______-1	______-2	______-3	______-4	______-5)

Exhibit A-18 — (cont.)

58. Please place an X on the lines below in the spaces that best indicate how (the patient) feels about each of the questions. For example, in the first item, if you thought it was very easy to get to the place where you had surgery, you would mark an X on the far left hand line (1). If you felt it was very difficult to get there you would mark the far right hand line (5). The middle line would be used when you felt the facility was neither easy, nor difficult to get to. The lines 2 and 4 may be used to show when you feel less strongly one way or the other.

a. Access to Facility
Very Easy: (62(______-1 ______-2 ______-3 ______-4 ______-5): Very Difficult

b. Friendliness of Nurses and Staff:
Very Friendly: (63(______-1 ______-2 ______-3 ______-4 ______-5): Very Unfriendly

c. Quality of Care:
High Quality: (64(______-1 ______-2 ______-3 ______-4 ______-5): Low Quality

d. Attention to Patient Needs:
Much Attention: (65(______-1 ______-2 ______-3 ______-4 ______-5): Little Attention

e. Waiting Time:
No Waiting: (66(______-1 ______-2 ______-3 ______-4 ______-5): A lot of Waiting

f. Physical Environment:
Pleasant: (67(______-1 ______-2 ______-3 ______-4 ______-5): Unpleasant

g. Pain and Discomfort After Surgery:
A lot of pain & Discomfort: (68(______-1 ______-2 ______-3 ______-4 ______-5): Not much Pain & Discomfort

h. Friendliness of Doctor:
Very Friendly: (69(______-1 ______-2 ______-3 ______-4 ______-5): Very Unfriendly

i. Anesthesiologist fee:
Very Reasonable: (70(______-1 ______-2 ______-3 ______-4 ______-5): Not at all Reasonable

j. Surgeon Fee:
Very Reasonable: (71(______-1 ______-2 ______-3 ______-4 ______-5): Not at all Reasonable

k. Facility Fee:
Very Reasonable: (72(______-1 ______-2 ______-3 ______-4 ______-5): Not at all Reasonable

l. My Confidence In The Surgeon:
Much Confidence: (73(______-1 ______-2 ______-3 ______-4 ______-5): Not Much Confidence

m. My Confidence In The Anesthesiologist:
Much Confidence: (74(______-1 ______-2 ______-3 ______-4 ______-5): Not Much Confidence

End Card 10	10	Begin Card 11(1-4)	DUP

Exhibit A-18 — (cont.)

59. Did (the patient) meet the surgeon or anesthesiologist in the facility before the surgery?

Yes . . . . . (5(_____-1
No . . . . _____-2
D.K. . . . . . . _____-9)

60. Did (the patient) talk with the surgeon or anesthesiologist after the surgery, before leaving the facility?

Yes . . . . . (6(_____-1
No . . . . _____-2
D.K. . . . . . . _____-9)

61. Generally speaking, how satisfied is (the patient) with the results of your surgery? Would you say?

Very Satisfied . . . . (7(_____-1
Somewhat Satisfied . . . . _____-2
Slightly Satisfied . . . . _____-3
Not at All Satisfied . . . . . . _____-4
D.K. . . . . _____-9)

62. What are satisfactions (the patient) has with the surgery or recuperation? Please describe:

______________________________ _____ (14-15(___ ___)
____
____
______________________________(16-17(___ ___)
____
______________________________(18-19)___ ___)

63. What dissatisfactions does (the patient) have with the surgery or recuperation? Please describe:

______________________________(8-9(___ ___)
____
______________________________(10-11(___ ___)
____
______________________________(12-13)___ ___)

64. Did (the patient) receive instructions about how to prepare for the surgery before coming to the facility -- what to do and what not to do?

Yes . . . (20(_________-1
No . . . . . _________-2
D.K. . . . . . _________-9)

65. What kind of anesthetic was given?

General . . . . (21(_________-1
Regional . . . . _________-2
Local . . . . _________-3
D.K.. . . . . _________-9)

Exhibit A-18 -- (cont.)

66. Did the surgeon give (the patient) a choice about the kind of anesthetic?

Yes . . . (22 (__________-1
No . . . . . __________-2 GO TO 68
D.K.. . . . . __________-9)

67. Why did (the patient) choose this kind of anesthetic?

Less painful . . . . (23 (__________-1
Less embarrassing . . . . __________-2
Fear . . . . __________-3
Fewer after-effects . . . . __________-4
Recommended by doctor . . . . . . __________-5
Other specify______________ __________-6
____
N.A. . . . . __________-8
D.K. . . . . -9)

68. Do you think that the time (the patient) you went home after surgery was too soon, too late, or about right?

Too soon . . . . (24 (__________-1 GO TO 69
Too late . . . . __________-2 GO TO 70
About Right . . . . __________-3) GO TO 71

69. How much longer do you think (the patient) should have stayed?

Hours (25-28 (_ _ _ _) GO TO 71

	End Card 11	11	Begin Card 12(1-4)	DUP

70. How much sooner do you think (the patient) should have left?

Hours(5-8 (_ _ _ _)

71. Did (the patient) receive instructions on how to care for him/herself after release from the facility -- what to do and what not to do?

Yes . . . (9(__________-1
No . . . . . __________-2
D.K. . . . . __________-9)

72. Did (the patient) have someone at home to help while still recovering from the surgery?

Yes . . . (10(__________-1
No . . . . . __________-2) GO TO 74

73. How important was it to (the patient) to have someone at home to help?

Very important . . . . (11(_________-1
Somewhat important . . . . . . _________-2
Slightly important . . . . . . _________-3
Not at all important . . . . . _________-4
N.A. . . . . _________-8
D.K. . . . . _________-9)

(GO TO 75)

74. Would (the patient) have preferred to have had someone at home?

Yes . . .(12(_________-1
No . . . . ._________-2
N.A.. . . . ._________-8
D.K.. . . . ._________-9)

75. Looking back, if (the patient) had to make the decision about whether or not to have the surgery, would (the patient) again decide to have it?

Yes . . .(13(_________-1
No . . . . ._________-2
D.K.. . . . ._________-9)

76. Looking, back if (the patient) had to make the decision over, would (the patient) again choose (name of facility and setting) or choose another facility?

Same Facility . . . . . .(14 (_________-1
Another Facility. . . . _________-2
D.K.. . . _________-9)

77. How long has (the patient's) immediate family lived in Maricopa County?

Years(17-18 (____ ____)

78. What is (the patient's) position in the household?

Male head................. (19(_____-1
Female head (no male head)....._____-2
Wife........................._____-3
Son.........................._____-4
Daughter....................._____-5
Other (specify)
______________________________-6

Reproduced from best available copy.

79a. Is (the patient) primarily an hourly wage worker, salaried, self-employed, or what?

Hourly wage worker . . . . (20(________-1
Salaried . . . . ________-2
Self employed . . . . ________-3
Retired . . . . ________-4
Unemployed . . . . ________-5
None of the above:
Student . . . . ________-6
Military service . . . . ________-7
Housewife . . . . ________-8
Other (specify) . . . . ________-9)

(IF PATIENT IS HEAD OF HOUSEHOLD, COPY ANSWER FROM 79a TO 79b AND GO TO 79c.)

79b. Is the head of the household primarily an hourly wage worker, salaried, self-employed or what?

Hourly wage worker . . . . (21(________-1
Salaried . . . . ________-2
Self employed . . . . ________-3
Retired . . . . ________-4
Unemployed . . . . ________-5
None of the above:
Student . . . . ________-6
Military service . . . . ________-7
Housewife . . . . ________-8
Other (specify) . . . . ________-9)

79c. What kind of work does the head of the household primarily do? (PROBE FULLY -- FIND OUT WHAT JOB IS CALLED, DUTIES INVOLVED, ETC. IN ORDER CATEGORIZE CORRECTLY BELOW)

Professional, engineer . . . . .(22(________-1
Manager, official, proprietor . . . .________-2
Clerical Worker . . . . .________-3
Sales worker . . . . .________-4
Skilled craftsman, foreman . . . . .________-5
Operative, unskilled laborer
(except farm) . . . . .________-6
Service worker . . . . .________-7
Farm, farm manager, laborer . . . . .________-8
Ranch, ranch manager, laborer . . . .________-9
Other (specify) ______________ . . .________-0)
____

80a. For statistical purposes only, we need to know the total household income for 1975. Will you please look at this card and tell me which letter best represents all the money the members of the household either earned or received including wages, pensions, stocks, bonds, real estate and other investments before taxes? (HAND RESPONDENT CARD)

A. Under $3,000 . . . .(23(________-1
B. $3,000 to $4,999 . . . . .________-2
C. $5,000 to $6,999 . . . . .________-3
D $7,000 to $9,999 . . . . .________-4
E. $10,000 to $14,999 . . . . . . .________-5
F. $15,000 to $19,999 . . . . . . .________-6
G. $20,000 to $24,999 . . . . . . .________-7
H. $25,000 and over . . . . .________-8
I. Not sure/refused ________-9)

80b. Also please tell me which letter best represents the income of just (the patient) for 1975.

(24(________)

---

81. What is the last grade of school the respondent completed?

8th grade or less . . . . (25(________-1
Some high school . . . . ________-2
High school graduate . . . . ________-3
Some college . . . . ________-4
2-year college grad(community,etc.). ________-5
4-year college graduate . . . . . . ________-6
Post graduate . . . . ________-7
Other . . . . ________-8
Not sure/refused . . . . ________-9

---

82. How many people, adults and children (under 18) live in your household?

Adults: (26-27(____ ____)
Children: (28-29(____ ____)

---

83. Compared to other persons (the patient) age, would you say that (the patient's) general health is excellent, good, fair, or poor?

Excellent .(30 (________-1
Good . . . . . ________-2
Fair . . . . . ________-3
Poor . . . . . ________-4
D.K. . . . . . ________-9)

---

84. Compared to other households of this size, would you say that the general health of the household is excellent, good, fair, or poor?

Excellent (31(________-1
Good . . . . ________-2
Fair . . . . ________-3
Poor . . . . ________-4
D.K. . . . . ________-9)

---

85. Are you single, married, widowed, divorced or separated?

Single . .(32(________-1
Married . . . . ________-2
Widowed . . . . ________-3
Divorced. . . . ________-4
Separated . . . ________-5
D.K. . . . . . ________-9)

86. In which of the following groups would you place yourself? (HAND RESPONDENT CARD)

American Indian or Alaskan Native:	(33_____-1
Asian or Pacific Islander:	_____-2
Black, not of Hispanic Origin:	_____-3
Hispanic:	_____-4
White, not of Hispanic Origin:	_____-5)
Other:	_____-6)
D.K.:	_____-7)

End Card 13	13	Begin Card 14 (1-4)	DUP

* * * * * * * *

This completes the interview. Thank you very much for your assistance and your time. I may have a few additional questions after I've reviewed an interview. If so, I will telephone you for the information if that would be all right.

Do you have any questions about our study that you would like to ask?

Thank you again for your help.

* * * * * * * *

Exhibit A-18 — (cont.)

87. **CHARGE CODE SHEETS**

Page: ____ of: ____

Date of Charge Mth Day YR	Description of Charge	Charge Code	Charge Amount Dollars Cents	Phase Number	Additional Comments
(5-10) ☐☐☐☐☐☐		11-12) ☐☐	(13-17) ☐☐☐☐☐	(18-19) ☐☐	
(20-25) ☐☐☐☐☐☐		26-27) ☐☐	(28-32) ☐☐☐☐☐	(33-34) ☐☐	
(35-40) ☐☐☐☐☐☐		41-42) ☐☐	(43-47) ☐☐☐☐☐	(48-49) ☐☐	
(50-55) ☐☐☐☐☐☐		56-57) ☐☐	(58-62) ☐☐☐☐☐	(63-64) ☐☐	
(65-70) ☐☐☐☐☐☐		71-72) ☐☐	(73-77) ☐☐☐☐☐	(78-79) ☐☐	
			End Card — (80) ☐	Begin Card (1-4)	DUP

PHASE NUMBERS

01 - Screening

02 - Pre-Operative

03 - Operative

04 - Post-Operative

05 - Recuperative

06 - Combination of Phases 1 and 5

07 - Combination of Phases 2,3, and 4

08 - Combination of Phases 2,4, and 5

09 - Combination of all five phases

98 - Not Applicable (e.g. Pathology Report charges)

Exhibit A-18 -- (cont.)

87. CHARGE CODE SHEETS

Page: ____ **of:** ____

Date of Charge Mth Day YR	Description of Charge	Charge Code	Charge Amount Dollars Cents	Phase Number	Additional Comments
(5-10) ☐☐☐☐☐☐		11-12) ☐☐	(13-17) ☐☐☐ ☐☐	(18-19) ☐☐	
(20-25) ☐☐☐☐☐☐		26-27) ☐☐	(28-32) ☐☐☐ ☐☐	(33-34) ☐☐	
(35-40) ☐☐☐☐☐☐		41-42) ☐☐	(43-47) ☐☐☐ ☐☐	(48-49) ☐☐	
(50-55) ☐☐☐☐☐☐		56-57) ☐☐	(58-62) ☐☐☐ ☐☐	(63-64) ☐☐	
(65-70) ☐☐☐☐☐☐		71-72) ☐☐	(73-77) ☐☐☐ ☐☐	(78-79) ☐☐	
			End Card — —(80) __ __	Begin Card (1-4)	DUP

PHASE NUMBERS

01 - Screening

02 - Pre-Operative

03 - Operative

04 - Post-Operative

05 - Recuperative

06 - Combination of Phases 1 and 5

07 - Combination of Phases 2,3, and 4

08 - Combination of Phases 2,4, and 5

09 - Combination of all five phases

98 - Not Applicable (e.g. Pathology Report charges)

Exhibit A-18 -- (cont.)

87. CHARGE CODE SHEETS

Page: ____ of: ____

Date of Charge Mth Day YR	Description of Charge	Charge Code	Charge Amount Dollars Cents	Phase Number	Additional Comments
(5-10) ☐☐☐☐☐☐		(11-12) ☐☐	(13-17) ☐ ☐	(18-19) ☐☐	
(20-25) ☐☐☐☐☐☐		(26-27) ☐☐	(28-32) ☐ ☐	(33-34) ☐☐	
(35-40) ☐☐☐☐☐☐		(41-42) ☐☐	(43-47) ☐ ☐	(48-49) ☐☐	
(50-55) ☐☐☐☐☐☐		(56-57) ☐☐	(58-62) ☐ ☐	(63-64) ☐☐	
(65-70) ☐☐☐☐☐☐		(71-72) ☐☐	(73-77) ☐ ☐	(78-79) ☐☐	
			End Card __ __(80) ☐	Begin Card (1-4)	DUP

PHASE NUMBERS

01 - Screening

02 - Pre-Operative

03 - Operative

04 - Post-Operative

05 - Recuperative

06 - Combination of Phases 1 and 5

07 - Combination of Phases 2,3, and 4

08 - Combination of Phases 2,4, and 5

09 - Combination of all five phases

98 - Not Applicable (e.g. Pathology Report charges)

Exhibit A-18 — (cont.)

87. CHARGE CODE SHEETS

Page: ____ of: ____

Date of Charge Mth Day YR	Description of Charge	Charge Code	Charge Amount Dollars Cents	Phase Number	Additional Comments
(5-10)		(11-12)	(13-17)	(18-19)	
(20-25)		(26-27)	(28-32)	(33-34)	
(35-40)		(41-42)	(43-47)	(48-49)	
(50-55)		(56-57)	(58-62)	(63-64)	
(65-70)		(71-72)	(73-77)	(78-79)	
			End Card __ (80)	Begin Card (1-4)	DUP

PHASE NUMBERS

01 - Screening

02 - Pre-Operative

03 - Operative

04 - Post-Operative

05 - Recuperative

06 - Combination of Phases 1 and 5

07 - Combination of Phases 2,3, and 4

08 - Combination of Phases 2,4, and 5

09 - Combination of all five phases

98 - Not Applicable (e.g. Pathology Report charges)

Exhibit A-19

Physician Questionnaire

THE ORKAND CORPORATION

8630 Fenton Street
Silver Spring, Maryland 20910
(301) 585-8480

December 15, 1976

Dear Doctor:

The Office of Research and Statistics of the Social Security Administration is sponsoring a comprehensive research project in ambulatory surgery. The Orkand Corporation of Silver Spring, Maryland is conducting the research under contract to the Social Security Administration with the cooperation of several health care institutions in the Phoenix area. The focus of the study is to assess the relative advantages and disadvantages of alternative surgical settings for the set of minor surgical procedures included in the study.

The results of the study will assist the Social Security Administration in determining the need for the present Federal regulations to be changed to allow for Free Standing Ambulatory Surgical Centers (non-hospital owned facilities such as the Phoenix Surgicenter®) to be reimbursed for the facility fee for Medicare patients treated in the facility.

To assist us in our research effort, we are asking your professional opinion about the characteristics of surgical practice in the Phoenix area in general and about some frequently performed minor surgical procedures. Please help us by completing the attached questionnaire and returning it in the enclosed envelope. Based on the nature of your practice not all items in the questionnaire will necessarily apply. Even if you do not perform surgery, we request that you fill out the background information and return the questionnaire. We estimate that it will take about thirty to forty minutes to complete the questionnaire.

I would like to emphasize that all responses will be held in the strictest confidence. Information will be compiled only in such a way that individuals cannot be identified. We have asked for your name on the questionnaire only so that we may send out additional copies of the questionnaire to those who have not responded or whose responses were lost in the mail. No individual will be identified with any specific response in our study. Additional information about the project and the confidentiality considerations is given in the attachment to the letter from the Social Security Administration.

The cooperation of the physicians in the Phoenix area is very important to the research effort in order to assess the impact of ambulatory surgical services in the community. If you have any questions about the research project or need clarification of any items on the attached form, please call me collect at (301) 585-8480 in Silver Spring, Maryland.

Thank you for your assistance.

Very truly yours,

Donald S. Orkand, Ph.D
President

ATTACHMENT

The research project in which you have been asked to participate is entitled:

"Comparative Evaluation of Costs, Quality, and Systems Effects of Ambulatory Surgery Performed In Alternative Settings"

The project is being conducted by The Orkand Corporation for the Social Security Administration under the authority of Section 1875 of the Social Security Act as amended. For your information, the project contract number is SSA-PMB-74-387, and the government staff person responsible for the project is:

John W. Coyle
Office of Research and Statistics
Room 940
1875 Connecticut Avenue, N.W.
Washington, D.C. 20009
(202) 673-5651

Participation in this study is voluntary. Whether of not you agree to participate in the study will not in any way affect the eligibility of your patients for present benefits. Data and other information acquired about you and your patients by the study team will be used for research purposes only. Regarding routine uses to which the information may be put, there are no routine uses of the information as the term is defined in the Privacy Act of 1974.

The participation of patients and physicians in the study will enable a comparison of ambulatory surgical services in different settings. The research results will be used in determining whether or not present Medicare reimbursement policies should be expanded to include surgical services provided in free-standing facilities.

Again, while we hope that you will agree to participate, your participation is voluntary.

(The above is to satisfy the requirements of Section E-3 of the Privacy Act of 1974.)

Exhibit A-19 — (cont.)

Page 1 of 4

AMBULATORY SURGERY RESEARCH PROJECT SOCIAL SECURITY ADMINISTRATION	PHYSICIAN QUESTIONNAIRE	OMB CLEARANCE NO: SSA 3214A THE ORKAND CORPORATION 8630 Fenton Street Silver Spring, Md.20910 (301) 585-8480

The purpose of the questionnaire is to obtain basic information on the practice of minor surgical procedures in the Phoenix area. The questionnaire is divided into four subject areas: I Background Information; II Settings Where Surgery Is Performed; III Satisfaction With Surgical Settings; and, IV Factors In Selecting A Surgical Setting.

LAST NAME, FIRST INITIAL:______________________________

I. BACKGROUND INFORMATION

1. What is your primary specialty?

______________________________(6-7(__ __)

2. In what year did you begin your practice in Maricopa County?

______(8-9(__ __)

3. How would you best describe the current activity level of your practice? (check one)
   a. Full-time active.(10(___1
   b. Part-time active.....___2
   c. Retired.............___3)

4. What is your age?

______(11-12(__ __)

5. What is the organizational type of your practice? (check one)
   a. Solo................(13(___1
   b. Group (single specialty).___2
   c. Group (multi specialty)..___3
   d. Health Maintenance Organization..........___4
   e. Hospital Staff..........___5
   f. Other (please describe)..___6)

____

6. Do you perform surgery of any kind?
   a. Yes.............(14(___1
   b. No.................___2)

IF YOU DO NOT PERFORM SURGERY PLEASE STOP. DO NOT COMPLETE THE REST OF THE QUESTIONNAIRE. RETURN THE QUESTIONNAIRE IN THE RETURN ENVELOPE. THANK YOU FOR YOUR PARTICIPATION.

II. SETTINGS IN WHICH SURGERY IS PERFORMED

7. In an average month, approximately how many surgeries do you perform? (Include procedures performed at a hospital, another facility, and in your office.)

(15-17(____ ____ ____)

8. How many of the surgeries that you perform in an average month do you perform on Medicare patients?

(18-19(____ ____)

9. Do you perform surgery on an "ambulatory" basis either in your office or in a facility where the patient does not have to stay overnight in the hospital?
   a. Yes........(20(____1
   b. No............____2)

10. How many of all surgeries you perform in an average month do you perform on an "ambulatory" basis either at a facility or in your office where the patient does not have to stay overnight?

(21-22(____ ____)

11. Of all the "ambulatory" surgeries that you perform, about how many do you perform on Medicare patients?

(23-24(____ ____)

12. What are the five "ambulatory" surgical procedures that you most frequently perform?
   a.________________________(25-29(_____)
   b.________________________(30-34(_____)
   c.________________________(35-39(_____)
   d.________________________(40-44(_____)
   e.________________________(45-49(_____)

Exhibit A-19 — (cont.)

13. In general, what characteristics make a procedure a candidate for "ambulatory" surgery?

____

____

____

____

____

____

(50-51(__ __) (52-53(__ __) (54-55 (__ __)

(56-57(__ __)

14. Do you perform surgery in your private office?

a. Yes.............(58(____1

b. No.................____2)

15. What are the three surgical procedures that you most frequently perform in your office?

a.____________________(59-63(______)

b.____________________(64-68(______)

c.____________________(69-73(______)

End card 1 (79-80(01) Begin card 2 (1-5(DUP)

16. Please estimate the number of surgeries you perform in an average month at each of the following locations:

a. Hospital Inpatient...(6-7(______)

b. Traditional Hospital Outpatient Department (i.e., Good Samaritan, St. Josephs, St. Lukes, etc.)................(8-9(______)

c. Scottsdale Memorial Outpatient Surgical Center...............(10-11(____)

d. Phoenix Baptist Outpatient Surgical Center...............(12-13(____)

e. Other hospital outpatient surgical center......(14-15(____)

f. Phoenix Surgicenter..(16-17(____)

g. Your private office..(18-19(____)

h. Other type of surgical setting..............(20-21(____)

(Please specify:________________

____

17. Please check in which of the following institutions you have performed surgery in the last year.

YES 1

Good Samaritan.........(22(_____)

Maricopa County........(23(_____)

Phoenix Baptist........(24(_____)

Scottsdale Memorial....(25(_____)

St. Joseph's...........(26(_____)

St. Luke's.............(27(_____)

Memorial...............(28(_____)

Desert Samaritan.......(29(_____)

Glendale Samaritan.....(30(_____)

John C. Lincoln........(31(_____)

Boswell Memorial.......(32(_____)

Doctors................(33(_____)

Maryvale Samaritan.....(34(_____)

Phoenix General........(35(_____)

NHE Community..........(36(_____)

Chandler Community.....(37(_____)

Mesa General...........(38(_____)

Mesa Lutheran..........(39(_____)

NHE Scottsdale.........(40(_____)

Tempe Community........(41(_____)

Valley View Community..(42(_____)

Wickenburg Community...(43(_____)

ASU Health Center......(44(_____)

Childrens Hospital.....(45(_____)

Phoenix Surgicenter....(46(_____)

18. Over the last three years, how would you say the proportion of ambulatory surgeries to total surgeries has changed in your practice?

a. Generally increased....(47(_____1

b. Stayed about the same......_____2

c. Generally decreased........_____3)

19. What would you say are the most important reasons for the increase/decrease?

____

____

____

____

(48-49(__ __) (50-51(__ __) (52-53(__ __)

20. Over the last three years, how would you say the proportion of office surgeries to total surgeries has changed in your practice?

a. Generally increased....(54(_____1

b. Stayed about the same......_____2

c. Generally decreased........_____3)

Page 3 of 4

21. What would you say are the most important reasons for the increase/decrease?

(55-56(__ __) (57-58(__ __) (59-60(__ __)

III. SATISFACTION WITH SURGICAL SETTINGS

22. Please list in order of importance the five most important factors that determine how satisfied or dissatisfied you are with a surgical setting for minor surgeries.

1. ____
2. ____
3. ____
4. ____
5. ____

(61-62(__ __) (63-64(__ __) (65-66(__ __)

(67-68(__ __) (69-70(__ __)

23. Based on the factors you have listed above, please rate your overall satisfaction with each of the surgical settings and facilities listed below. Rate each on a scale of 1 to 5 where 1=Very Satisfied; 2=Somewhat Satisfied; 3=Neither Satisfied or Dissatisfied; 4=Somewhat Dissatisfied; 5=Very Dissatisfied. The ratings apply only for minor surgery.

a. Hospital Inpatient...........(71(__)

b. Traditional Hospital Outpatient Department........(72(__)

c. Hospital Affiliated Ambulatory Surgical Center.............(73(__)

d. Free Standing (non-hospital owned) Ambulatory Surgical Center (Phoenix Surgicenter)...(74(__)

e. Physician's Office............(75(__)

End card 2 (79-80(01) Begin card 3 (1-5(DUP)

24. Please rate each of the five surgical settings for convenience to the surgeon on a scale of 1 to 5 where 1=very convenient; 2=somewhat convenient; 3=neither convenient nor inconvenient; 4=somewhat inconvenient; 5=very inconvenient. The ratings apply only for minor surgery.

a. Hospital Inpatient..............(6(__)

b. Traditional Hospital Outpatient Department...........(7(__)

c. Hospital Affiliated Ambulatory Surgical Center................(8(__)

d. Free Standing Ambulatory Surgical Center (Phoenix Surgicenter)....................(9(__)

e. Physician Office..............(10(__)

25. What would you say are the most significant advantages or disadvantages of the Free Standing Ambulatory Surgical Center as compared to the other settings for minor surgery?

Advantages: ____

Disadvantages: ____

(11-12(__ __) (13-14(__ __) (15-16(__ __)

(17-18(__ __) (19-20(__ __) (21-22(__ __)

Exhibit A-19 — (cont.)

26. What would you say are the most significant advantages or disadvantages of the hospital as compared to the other settings for minor surgery?

Advantages: ________________________________

____

____

Disadvantages: ________________________________

____

____

(23-24(__ __) (25-26(__ __) (27-28(__ __)

(29-30(__ __) (31-32(__ __) (33-34(__ __)

IV. FACTORS IN SELECTING A SURGICAL SETTING

27. For each of the following specific surgical procedures please indicate if you perform the procedure.

I PERFORM I

a. Myringotomy (with tubes)..(35(___)

b. Myringotomy (with tubes) and Adenoidectomy.........(36(___)

c. Tonsillectomy and Adenoidectomy.............(37(___)

d. Dilation and Curretage (diagnostic only).........(38(___)

e. Laparoscopy with BTC......(39(___)

f. Excision of Breast Mass...(40(___)

g. Ganglionectomy...........(41(___)

h. Inguinal Herniorraphy.....(42(___)

i. Vasectomy................(43(___)

j. Circumcision (ages 12-60).(44(___)

k. Augmentation Mammoplasty..(45(___)

l. Recession or Resection of Eye Muscle.............(46(___)

m. Excision of Lipoma or Sebaceous Cyst...........(47(___)

IF YOU DO NOT PERFORM ANY OF THE ABOVE SURGICAL PROCEDURES PLEASE DO NOT COMPLETE THE REST OF THE QUESTIONNAIRE. RETURN THE QUESTIONNAIRE IN THE RETURN ENVELOPE. THANK YOU FOR YOUR PARTICIPATION.

IF YOU DO PERFORM ONE OR MORE OF THE ABOVE SURGICAL PROCEDURES PLEASE FILL OUT A PROCEDURE INFORMATION SHEET ON EACH ONE.

AFTER YOU HAVE COMPLETED THE APPLICABLE PROCEDURE INFORMATION SHEETS, PLEASE RETURN ALL COMPLETED FORMS IN THE RETURN ENVELOPE.

THANK YOU VERY MUCH FOR YOUR PARTICIPATION.

Exhibit A-19 — (cont.)

PROCEDURE INFORMATION SHEET

1. Procedure Name:______________(6-7(____)

2. What surgical settings do you feel are appropriate for this surgical procedure? (Please check)
   - a. Hospital inpatient...........(8(____)
   - b. Traditional hospital outpatient.................(9(____)
   - c. Hospital affiliated ambulatory surgical center....................(10(____)
   - d. Free Standing ambulatory surgical center...........(11(____)
   - e. Physician's office..........(12(____)

3. What percent of the patients having this procedure would require general anesthesia?
   (13-14(__ __ __%)

4. What laboratory tests do you think should be performed prior to surgery for this procedure?
   - a. Urinanalysis (dip stick)....(15(____)
   - b. Urinanalysis (micro)........(16(____)
   - c. Hemoglobin..................(17(____)
   - d. Hematocrit..................(18(____)
   - e. White blood cell count......(19(____)
   - f. Differential................(20(____)
   - g. Complete blood count........(21(____)
   - h. Other (specify)____________(22(____)
   - i. Other (specify)____________(23(____)

5. Do you think a chest X-ray should generally be performed prior to surgery?
   - a. Yes.....................(24(____1
   - b. No.........................____2)

6. Do you think an EKG should generally be performed prior to surgery?
   - a. Yes.....................(25(____1
   - b. No.........................____2)

7. Do you think that the patient's heart needs to be monitored electronicly during this procedure?
   - a. Yes.....................(26(____1
   - b. No.........................____2)

8. Do you think a pathology test should be performed if tissue is removed?
   - a. Always..................(27(____1
   - b. At the discretion of the surgeon.....................____2
   - c. Never......................____3)

9a. Do you think the patient should stay overnight in the hospital for this procedure? (Generally)
   - a. Yes...................(28(____1
   - b. No........................____2)

   (Go to 10)

9b. How many days should the patient stay in the hospital?
   (29-30(__ __)

10. Please describe under what conditions you would recommend that a patient have this procedure as an inpatient rather than on an ambulatory basis.

____

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____

(31-32(__ __) (33-34(__ __) (35-36(__ __)

(37-38(__ __) (39-40(__ __)

11. Please describe under what conditions you would recommend that the patient have this procedure in the physician's office rather than at a surgical facility

____

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____

(41-42(__ __) (43-44(__ __) (45-46(__ __)
(47-48(__ __) (49-50(__ __) (51-52(__ __)

12. In the last three months approximately how many of these procedures have you performed in the following settings?
   - a. Inpatient hospital......(47-48(____)
   - b. Traditional hospital outpatient...........(49-50(____)
   - c. Hospital affiliated ambulatory surgical center................(51-52(____)
   - d. Freestanding ambulatory surgery center (Phoenix Surgicenter).(53-54(____)
   - e. Physician's Office......(55-56(____)

PLEASE USE REVERSE SIDE FOR ADDITIONAL COMMENTS OR INFORMATION

Exhibit A-19 — (cont.)

PROCEDURE INFORMATION SHEET

1. Procedure Name: ______________ (6-7(____)

2. What surgical settings do you feel are appropriate for this surgical procedure? (Please check)
   - a. Hospital inpatient........... (8(____)
   - b. Traditional hospital outpatient................. (9(____)
   - c. Hospital affiliated ambulatory surgical center.................... (10(____)
   - d. Free Standing ambulatory surgical center........... (11(____)
   - e. Physician's office.......... (12(____)

3. What percent of the patients having this procedure would require general anesthesia?
   (13-14(__ __ __%)

4. What laboratory tests do you think should be performed prior to surgery for this procedure?
   - a. Urinanalysis (dip stick).... (15(____)
   - b. Urinanalysis (micro)........ (16(____)
   - c. Hemoglobin.................. (17(____)
   - d. Hematocrit.................. (18(____)
   - e. White blood cell count...... (19(____)
   - f. Differential................ (20(____)
   - g. Complete blood count........ (21(____)
   - h. Other (specify)____________ (22(____)
   - i. Other (specify)____________ (23(____)

5. Do you think a chest X-ray should generally be performed prior to surgery?
   - a. Yes.................... (24(____1
   - b. No........................ ____2)

6. Do you think an EKG should generally be performed prior to surgery?
   - a. Yes.................... (25(____1
   - b. No........................ ____2)

7. Do you think that the patient's heart needs to be monitored electronicly during this procedure?
   - a. Yes.................... (26(____1
   - b. No........................ ____2)

8. Do you think a pathology test should be performed if tissue is removed?
   - a. Always................. (27(____1
   - b. At the discretion of the surgeon.................... ____2
   - c. Never..................... ____3)

9a. Do you think the patient should stay overnight in the hospital for this procedure? (Generally)
   - a. Yes.................... (28(____1
   - b. No........................ ____2)

   (Go to 10)

9b. How many days should the patient stay in the hospital?
   (29-30(__ __)

10. Please describe under what conditions you would recommend that a patient have this procedure as an inpatient rather than on an ambulatory basis.

____

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(31-32(__ __) (33-34(__ __) (35-36(__ __)
(37-38(__ __) (39-40(__ __)

11. Please describe under what conditions you would recommend that the patient have this procedure in the physician's office rather than at a surgical facility

____

____

____

____

(41-42(__ __) (43-44(__ __) (45-46(__ __)
(47-48(__ __) (49-50(__ __) (51-52(__ __)

12. In the last three months approximately how many of these procedures have you performed in the following settings?
   - a. Inpatient hospital...... (47-48(____)
   - b. Traditional hospital outpatient............ (49-50(____)
   - c. Hospital affiliated ambulatory surgical center................ (51-52(____)
   - d. Freestanding ambulatory surgery center (Phoenix Surgicenter). (53-54(____)
   - e. Physician's Office...... (55-56(____)

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PROCEDURE INFORMATION SHEET

1. Procedure Name:________________(6-7(____)

2. What surgical settings do you feel are appropriate for this surgical procedure? (Please check)
   - a. Hospital inpatient...........(8(_____)
   - b. Traditional hospital outpatient.................(9(_____)
   - c. Hospital affiliated ambulatory surgical center....................(10(_____)
   - d. Free Standing ambulatory surgical center...........(11(_____)
   - e. Physician's office..........(12(_____)

3. What percent of the patients having this procedure would require general anesthesia?
   (13-14(__ __ __%)

4. What laboratory tests do you think should be performed prior to surgery for this procedure?
   - a. Urinanalysis (dip stick)....(15(_____)
   - b. Urinanalysis (micro)........(16(_____)
   - c. Hemoglobin..................(17(_____)
   - d. Hematocrit..................(18(_____)
   - e. White blood cell count......(19(_____)
   - f. Differential................(20(_____)
   - g. Complete blood count........(21(_____)
   - h. Other (specify)_____________(22(_____)
   - i. Other (specify)_____________(23(_____)

5. Do you think a chest X-ray should generally be performed prior to surgery?
   - a. Yes.....................(24(_____1
   - b. No.........................._____2)

6. Do you think an EKG should generally be performed prior to surgery?
   - a. Yes.....................(25(_____1
   - b. No.........................._____2)

7. Do you think that the patient's heart needs to be monitored electronicly during this procedure?
   - a. Yes.....................(26(_____1
   - b. No.........................._____2)

8. Do you think a pathology test should be performed if tissue is removed?
   - a. Always..................(27(_____1
   - b. At the discretion of the surgeon....................._____2
   - c. Never......................._____3)

9a. Do you think the patient should stay overnight in the hospital for this procedure? (Generally)
   - a. Yes...................(28(_____1
   - b. No........................_____2)
     (Go to 10)

9b. How many days should the patient stay in the hospital?
   (29-30(__ __)

10. Please describe under what conditions you would recommend that a patient have this procedure as an inpatient rather than on an ambulatory basis.

____

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____

(31-32(__ __) (33-34(__ __) (35-36(__ __)

(37-38(__ __) (39-40(__ __)

11. Please describe under what conditions you would recommend that the patient have this procedure in the physician's office rather than at a surgical facility

____

____

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____

(41-42(__ __) (43-44(__ __) (45-46(__ __)
(47-48(__ __) (49-50(__ __) (51-52(__ __)

12. In the last three months approximately how many of these procedures have you performed in the following settings?
   - a. Inpatient hospital......(47-48(_____)
   - b. Traditional hospital outpatient............(49-50(_____)
   - c. Hospital affiliated ambulatory surgical center................(51-52(_____)
   - d. Freestanding ambulatory surgery center (Phoenix Surgicenter).(53-54(_____)
   - e. Physician's Office......(55-56(_____)

PLEASE USE REVERSE SIDE FOR ADDITIONAL COMMENTS OR INFORMATION

patients having particular surgeries. The physician questionnaire requested specific information on the surgical setting preference, laboratory tests, patient monitoring, radiology, and conditions that would recommend inpatient or physician office surgical settings for the surgical procedure.

Outcome Quality Data Collection

The assessment of surgical outcome was based on information obtained from the medical record to examine the frequency of complications resulting from surgery in the alternative surgical settings. Also obtained from the medical records study was information on the performance of pathology examinations for selected surgical procedures and the findings of the pathology review.

The patient's report of the resolution of the problem requiring surgery and the patient's satisfaction and dissatisfactions with the surgical episode was obtained through the use of the patient questionnaire.

The physician's satisfaction with alternative surgical settings was assessed with the physician questionnaire. The physicians were requested to rate the surgical settings with which they had experience in terms of overall satisfaction and convenience. In addition, the physicians were asked to describe in detail any perceived advantages or disadvantages of the ambulatory surgical setting and the inpatient surgical setting for the performance of minor surgical procedures.

The pretest mailing of 56 questionnaires resulted in a 20% response rate and slight modifications to the survey instrument. The questionnaire was mailed to all physicians with surgical specialities as well as general practitioners and family practitioners in Maricopa County—a total of 1,234 physicians. A second copy of the questionnaire was sent to physicians who had not responded to the first mailing within four weeks. A total of 382 responses were received with a cumulative response rate from the first and second mailings of 31%.

IMPACT METHODOLOGY

Introduction

In this section, the methodology used in conducting the impact study is presented. This includes the following major sections:

- Summary Volume Data for 20 Facilities
- Selection of Principal Impact Institutions
- Selection of Study Years and Sampling Methodology
- Surgical Procedure Data Collection
- Hospital Revenues, Costs, and Prices
- Surgical Resources Inventory
- Demographic and Socioeconomic Information.

These are presented in the sections that follow.

Summary Volume Data for 20 Facilities

Summary data on surgical volume were collected from 20 hospitals in Maricopa County for the 1967 to 1975 time period. Those institutions — of 25 approached — comprised 87% of all bed capacity in greater Phoenix. The central variables of interest consisted of surgery volumes from 1967 to 1975 by setting. Considerable difficulties were encountered in obtaining these data. Secondary sources accessible to the public do not exist, and five institutions declined to participate in the study, both on grounds of perceived confidentiality, and because they may have lacked some of the relevant information. The information that was obtained often omitted several time periods. One additional problem was that of inconsistent terminology among institutions in describing "procedures," "cases," "patients," and "operations." For the three cases in which one or more years of data were missing, these were extrapolated from available data using the least squares technique. Complete and comparable information, however, was obtained from those hospitals considered most likely to have been affected by Surgicenter (the "primary impact institutions").

Hospitals that agreed to participate provided substantial amounts of information, some of it conflicting. The principal data sources included:

- Operating room records and log books
- Department statistics from business and medical records offices
- Hospital Activity Summary (HAS) data prepared for the American Hospital Association.

For the seven primary impact institutions monthly data on surgical volume by setting were obtained, while for the other institutions, annual data were obtained. Although the data conflicts in a few instances were irreconcilable, most were resolved by obtaining counts of outpatient surgery done in operating rooms other than those done in major hospital surgical facilities (such as emergency rooms) and including only numbers of cases, not operations or procedures.

Selection of Primary Impact Institutions

For the detailed assessment of impact, a decision was made to concentrate primarily on seven primary impact institutions. Six of these institutions were viewed as the ones most likely to be affected by Surgicenter. The impact institutions included:

- Surgicenter
- Good Samaritan
- St. Joseph's
- St. Luke's
- Phoenix Baptist
- Scottsdale Memorial
- Memorial

These were selected for the following reasons:

- Proximity to Surgicenter
- Judgment of knowledgeable observers
- Assessment of current data on surgery volume
- Agreement to cooperate.

The two largest hospitals in Phoenix are located in Surgicenter's immediate neighborhood. The other designated impact institutions are within five miles of Surgicenter. In the view of knowledgeable physicians, hospital administrators, and health planners, Surgicenter attracted physicians and patients mostly from Good Samaritan and St. Joseph's, possibly from St. Lukes and Memorial, and helped induce Scottsdale Memorial and Phoenix Baptist to start HAASCs. Three hospitals within a radius of five miles from Surgicenter, Phoenix General, John C. Lincoln, and Doctors declined to participate as primary impact institutions. Their reasons included perceived problems of confidentiality, lack of adequate records, and perceived lack of effect from Surgicenter. Their non-participation meant that certain details of the volume of surgeries performed there could not be obtained. These institutions are, however, included in the aggregates of surgeries performed at the 20 institutions. Maricopa County General Hospital, a "welfare" institution, was omitted because it appeared to operate with a different mix of clientele than Surgicenter.

The seven primary impact institutions accounted for about 47% of the operating rooms in greater Phoenix in 1975, and 51% of surgery volume. The proportion that these institutions constituted over the 1968-1975 period is shown in Exhibit A-20.

Selection of Study Years and Sampling Methodology

To analyze shifts in specific procedures among impact institutions and to identify the characteristics of these procedures, intensive investigation of operating room records was required. Because the volume of surgeries at impact institutions was so high, a twenty-day sample for each of three years, 1969, 1972, and 1975 was selected. (The total number of surgeries at the seven impact institutions during the 1968-1975 period was greater than 400,000.)

To ensure comparability among institutions, weekends were omitted from the samples. A random twenty-day sample was expected to produce a relative error for annual estimates of about 1.7%. The samples were stratified by day of week, in order to assess daily variation in surgery volumes. This would also correct for any variation in the type of complexity of surgeries performed on various days. Four dates were selected for each day of the week, for a total of twenty days per year. For each year, a sample size of approximately 6-8% of the annual volume was expected, or about 2600 to 3400 cases. The days and dates included in the sample frame are included in Exhibit A-21. Estimates of annual volumes of procedures and cases were obtained by multiplying sample observations by 12.5.

Although the same dates were used for most institutions, in two instances, missing data required the use of other dates. At St. Joseph's 1968 instead of 1969 days were used. At Good Samaritan, eight alternative dates were used in 1972.

Surgical Procedure Data Collection

Surgical Case Coding. All surgeries performed on the sampled days in the impact institutions were coded. Surgery coding was performed by The Orkand Corporation project staff at Good Samaritan and St. Joseph's Hospitals, and at Surgicenter. Designated hospital staff trained and supervised by the project team coded the information at the remaining hospitals. Surgery case coding forms were developed that included the following data elements:

- Facility
- Setting
- Date of Surgery
- Medical Record Number
- Procedure(s)
- Anesthesia Type
- Operating room number
- Anesthesia Time

Exhibit A-20

PROPORTION OF CAPACITY AT PRIMARY IMPACT TO ALL GREATER PHOENIX INSTITUTIONS

	1968	1969	1970	1971	1972	1973	1974	1975
BED CAPACITY	44.0%	53.2	50.3	49.5	45.0	44.1	45.2	45.5
NUMBER OF OPERATING ROOMS	49.4	49.4	52.3	54.8	48.2	48.8	48.8	47.2

Source: Data are from the institutions themselves and from secondary sources (see Exhibit V-42).

Exhibit A-21

SAMPLING DAYS AND DATES FOR IMPACT STUDY

DAY OF WEEK	YEAR (S)	DATES
Monday	1969, 1975	4,28, 9/15, 5/5, 3/3, 2/4, 5/26
Tuesday	1969, 1975	4/15, 11/11, 11/18, 7/8, 4/1, 7/16
Wednesday	1969, 1975	8/27, 10/1, 7/30, 7/2, 1/22, 6/18
Thursday	1969, 1975	12/18, 1/9, 2/27, 10/9, 7/17, 10/23
Friday	1969, 1975	9/5, 10/17, 5/23, 3/28, 2/7, 12/12
Monday	1972	4/24, 9/11, 5/1, 2/28, 2/14, 5/22
Tuesday	1972	4/4, 11/4, 11/21, 7/4, 3/28, 6/13
Wednesday	1972	8/30, 10/4, 8/2, 7/5, 1/26, 11/1
Thursday	1972	12/21, 1/13, 3/16, 10/12, 4/20, 10/26
Friday	1972	9/8, 10/20, 5/26, 3/31, 2/11, 12/15

- Sex of Patient
- Age of Patient
- Specialty
- Type of Case
- Payment Source
- Day of Week
- Physician Number
- Physician Name

The basic data sources for the case coding forms consisted of operating room logbooks and operating room records. Logbooks available at St. Luke's, Phoenix Baptist, and Scottsdale Memorial were limited to one line per case and are less informative than records. The latter available at Good Samaritan, St. Joseph's and Memorial, were one full page per case and were designed as supplements to medical records. In addition to logbooks, other data sources were reviewed to obtain the data on age, sex, and payment source needed to complete the coding forms.

With some exceptions, the descriptions of the coding fields are relatively straightforward. However, setting, specialty, type of case, procedures, anesthesia time, pay source, and physician name require additional explanation. Setting was sometimes not clearly identified in either operating room records or log books. In these cases, setting was readily identifiable by medical record number, or notations such as "O.P." or "C&G" (come-and-go). Surgery outpatients usually receive different medical record numbers. In some instances, patients could be identified as outpatients by their lack of hospital room numbers. Medical records sometimes had to be reviewed in order to determine setting.

Appropriate coding of specialty and type depended on how procedures were coded. Procedures could be tallied up to a maximum of three per case. The principal procedure was always coded first. Procedures, were classified into twenty-two categories. The first twenty categories consist of the twenty most frequent procedures performed at Surgicenter during the period 1972 through 1975. Coding these specific procedures permits tracking shifts in setting over time of procedures most likely to be performed on an ambulatory basis. Most importantly, estimates of annual frequencies of specific procedures by setting and institution could be made.

The next-to-last category, other outpatient-eligible procedure, refers to procedures that, regardless of setting, appeared to be candidates for delivery on an outpatient eligible (OPE). Other procedures were classed as outpatient-eligible if they were one of the procedures performed at Surgicenter during 1972 through 1975, or on a list prepared by the University of Washington on procedures deemed appropriate for ambulatory surgery. The definition of outpatient-eligible is wholly procedure-specific. All other procedures were classified as inpatient-only (IPO).

Specialty was coded on the basis of the procedure(s) performed on patients, not the specialties of physicians. Surgeons typically are qualified to perform surgeries in more than one specialty. Many physicians without surgery specialties identified by the Arizona Medical Association or the Phoenix yellow pages performed a broad array of surgeries at inpatient institutions. All cases, including those classified as IPO or OPE, were coded by specialty. For multiprocedure cases--the majority of all sampled cases--specialty was coded by the first, or principal procedure. Cardiovascular and thoracic surgeries were usually coded as general surgery.

Type of case depended directly on how procedures were classified. If any procedure performed on a patient were classified as IPO, the case would be also classified IPO. Multi-procedure cases were classified OPE only if all procedures were OPE. Cases handled in outpatient, HAASC, or FSASC settings were always categorized as OPE.

Cases were recategorized by complexity. All cases were assigned to the following classes:

- Class I - one OPE procedure
- Class II - two or three OPE procedures
- Class III- one or two OPE procedures and one or two IPO procedures
- Class IV - one IPO procedure
- Class V - two or three IPO procedures.

Cases falling into classes III through V by definition were assigned to IPO status, and had to be performed on an inpatient basis. Although cases belonging in either class I or II could have been performed at any setting, it was believed that class I cases were probably more likely to shift from IP to FSASC and HAASC settings than were class II cases.

Although both anesthesia time and operating time are listed on the surgical coding form, only anesthesia time was actually coded. In operating room records and log books, anesthesia time--the length of time an patient is under anesthesia--was almost always listed; operation time--the length of time surgeons and nurses take in performing operations--was often not provided. The actual time a patient spent in an operating room was almost never given. Anesthesia time typically lasts from 10 to 30 minutes longer than operation time. Since patients typically remain in operating rooms somewhat longer than the length of time of an operation, it followed that anesthesia time would provide better estimates of operating room capacity utilization.

Payment source refers to the principal means of payment for patients. A number of hospitals did not include information on payment source in their operating room records. The pay category "other" consisted almost entirely of industrial and union insurance policies. Where more than one type insurance coverage was listed, the first was coded as the pay source.

Physician name is a critical data element. For the few cases where more than one physician was listed, the name of the one listed first was coded. 654 physician names were coded in the sample, a high percentage of the total number of physicians in greater Phoenix. The term physician is used in this context rather than surgeons because a substantial proportion of sample cases were handled by M.D.s who do not call themselves surgeons. Physician names were recoded into numbers to preserve confidentiality. Physicians were categorized into two groups, high-volume physicians in 1969, and high-volume physicians at Surgicenter in 1975. Tracing the first group from 1969 through 1972 to 1975 permits assessment of how physicians practicing at inpatient institutions in 1969 changed the distribution of their caseloads among settings and institutions. Tracking the second group of physicians permits evaluation of how high-volume Surgicenter physicians have altered the distribution of their caseloads among institutions and settings over time. Although it had been planned to include complications in the case coding, this was dropped since very few records contained this designation.

Inpatient Surgery Characteristics. The main inpatient variables on which data were collected included:

- Number of surgery inpatients
- Number of surgery inpatient days
- Length of stay
- Percent of female patients
- Percent of patients over 65
- Percent Medicare patients

With the exception of the last variable, all data elements were disaggregated by surgical specialities.

The main source for information on surgery inpatient characteristics was "Analysis of Hospital Service" reports. Each impact hospital completed such reports at least once a year. Four hospitals are on the PAS system; Good Samaritan and Phoenix Bapitst Hospitals are not, although their reports appear to be roughly similar. The reports break down all hospital admissions to specific medical and surgery categories, and usually report both the total number of patients and number of patients receiving surgery services. The surgery specialty categories differed somewhat among hospitals and within hospitals over time. Nonetheless a minimum set of surgery specialties across hospitals was derived. It included:

- Gynecology
- Otorhinolaryngology
- General surgery
- Orthopedics
- Ophthalmology
- Dental/oral
- Urology
- Cardiovascular
- Thoracic

These specialties usually included up to 90% of non-obstetric surgery inpatient cases. The remaining inpatient surgery cases were included in a separate "other" category.

Several problems were encountered with these data. Specialty definitions appeared to vary over time, depending on the hospital. Some hospitals did not report some of the data elements, especially percent of patients over 65 and percent Medicare patients. The aggregate number of surgery patients per year derived from these reports was typically smaller than the number of surgery inpatients derived from other sources. The specialty categories may, in some instances, be misleading. It was not certain whether all surgery operations for patients within a reported category actually belonged in that category, although in all such cases a best estimation was made. Finally, although most patients admissions assigned to a certain category usually received surgery services, sometimes between 5% to 10% of patients did not.

Hospital Revenues, Costs, and Prices

General and Operating Room Revenues and Expenses. Data were collected on the following variables:

- Total revenues
- Total expenses
- Total operating room revenues
- Total operating room expenses without depreciation

Partly because of the reluctance of hospitals to make available budgetary information, the principal data source consisted of Medicare Cost Reports. These Reports were readily available from Arizona Blue Cross, although for some early years several data elements were sometimes left out. Depreciation was omitted from operating room expenses partly to obtain a rough measure of the ability of operating rooms to produce revenues for hospitals and partly because depreciation is sometimes allocated capriciously. The variables were combined into rough measures of "profitability", in order to test for any effects of Surgicenter's operations.

Surgery-Related Prices. The variables on which data were collected included:

- Operating room rates, by class of operation (major or minor)
- Flat fees for outpatient surgery procedures
- Semi-private room rates.

Before 1972, these data were available only from hospitals. Price data were not easily obtainable; in some cases, the data reportedly did not exist. After 1972, price data were available from the State Bureau of Health Economics. Efforts to obtain data on operating room charges and semi-private room rates for all impact institutions during the study period were eventually successful.

Operating room rates generally are charged by the hour and by class of surgery, usually major or minor, though by 1975 some hospitals began differentiating surgery among more classes. Flat fees refer to prices per procedure, similar to prices for other goods. Semi-private room rates were included in order to obtain estimates of how non-surgery hospitals prices changed over time.

Surgical Resources Inventory

As the population of greater Phoenix grew, so did surgery resources. Information on surgery resources constitutes a necessary element in assessing the impact of Surgicenter. The main variables on which data were collected included:

- Capacity in beds of all hospitals in greater Phoenix
- Number of operating rooms in all hospitals and ambulatory surgery facilities in greater Phoenix
- Number of physicians and surgeons by specialty in greater Phoenix

Data on bed and operating capacity were obtained from hospitals, state government agencies, and other sources such as the American Hospital Association's annual Guide Issue. Information obtained directly from hospitals appeared to be most reliable; information from state government agencies, though comprehensive, was occasionally in error. For hopsitals, outside of the impact area secondary data sources were generally used. Information on physicians and surgeons by specialty was collected form Phoenix telephone directories and the Arizona Medical Association.

In a number of instances, the problem of what constituted an operating room arose. Surgeries are reportedly done in cast, X-ray, emergency, and "minor" rooms, in addition to regularly identified operating rooms. Surgeries done outside of regular operating rooms proved to be particularly prevalent in downtown hospitals such as Good Samaritan, St. Joseph's, St. Luke's and Memorial. Many operations done in such sites--lacerations, minor sutures, cystoscopes, etc.--are not, according to some interpretations, surgeries. Hence, it was decided to exclude emergency, cast, and x-ray rooms in measures of operating room capacity, except in one instance--Memorial Hospital--where the cast room was used for regularly scheduled surgeries. Minor rooms were included as operating rooms.

If an operating room had already been set up, and was, or could be used without incurring heavy equipment costs, it was counted as available capacity. Thus, operating rooms with equipment in place used as storage areas, or without any alternative use, were counted as available capacity. Operating rooms that had been converted to, say, offices, were not counted as capacity.

Demographic and Socioeconomic Information

Information on population, income and prices constitute critical elements in the utilization of and demand for surgery services. Population characteristics are especially important because the demand for specific procedures varies considerably in response to the proportion of specific groups (e.g. women of child-bearing age) in the population. The Phoenix area grew rapidly during the late 1960's and early 1970's, and surgery utilization grew also. Data were collected on the following variables:

- Population of Maricopa County, greater Phoenix, and Phoenix City

- Population characteristics
  - Sex
  - Age
  - Ethnic Group
- Median per capita income and income distribution
- Unemployment and poverty
- Automobile ownership
- Health insurance coverage
- Number of retirees.

Emphasis was placed on the collection of data for Maricopa County as a whole, since for this defined area accurate data were available and the inclusion of the entire county would be more likely to detect the impact of Surgicenter than would the inclusion of only a more limited area.

Data sources for population characteristics such as sex, age, and ethnic group were Census data for 1970 and 1975, and estimates for intervening years complied by the Arizona Department of Economic Security. Census data were broken down by cities and towns to obtain estimates of population of Greater Phoenix. Department of Economic Security data was available only for Maricopa County--the Phoenix SMSA--and Phoenix City.

Greater Phoenix was defined to include the following cities: Phoenix, Tempe, Mesa, Chandler, Gilbert, Scottsdale, Paradise Valley, Glendale, Sun City, Youngtown, and Peoria. Together, these cities made up about 88% of Maricopa County's population in 1970, and 89% in 1975.

Data on characteristics such as health insurance coverage, automobile ownership, mean family size, income distribution, are based on annual surveys of households in greater Phoenix conducted by The Arizona Republic and Phoenix Gazette and published in Inside Phoenix. The consumer survey is based on a sample of 3,300 families each year.

The Phoenix price index is also based on a relatively small sample of Phoenix households conducted by the Bureau of Business and Economic Research of the University of Arziona.

Data were collected principally from the Bureau of the Census, agencies of the State government, and from private organizations. It was decided that for the purposes of the impact study, use of data on the County as a whole was appropriate, because it was doubtful that Surgicenter's impact was limited to within Phoenix city limits.

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